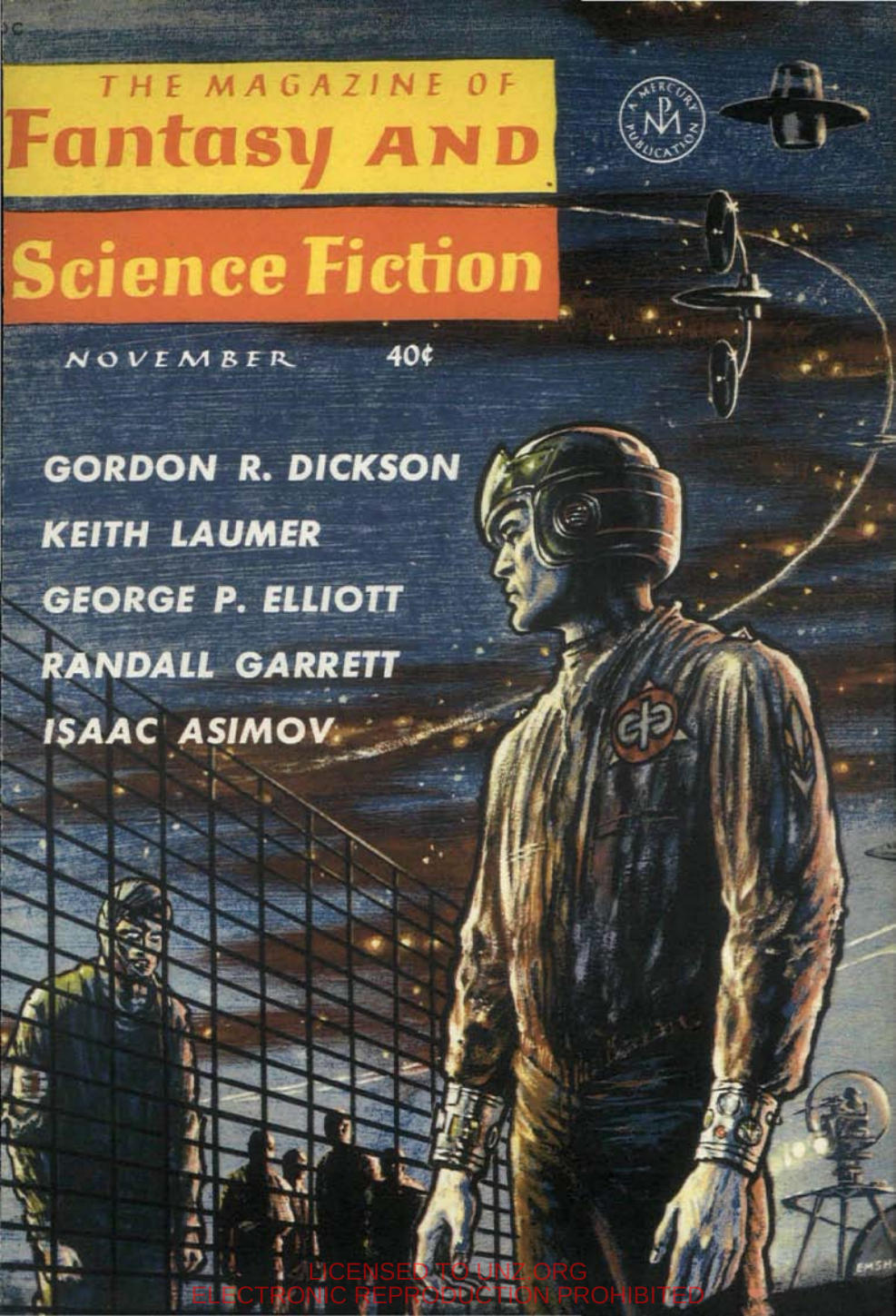

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Fantasy and Science Fiction

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Alfred Bester, BOOK EDITOR *Isaac Asimov,* CONTRIBUTING SCIENCE EDITOR
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In this issue . . .

Ever since the great science fiction pioneer, Hugo Gernsback, first began writing and buying science fiction for *Modern Electrics, Electric Experimenter,* and *Amazing Stories* in the early 1900s, he has stressed the importance of that word "science" in science fiction. The other day at lunch we asked him how he would define science, and jotted down his answer: "Science is a tool with which to explore the future, as it has the past." (He rules out, incidentally, sociology, psychiatry, and such, as sciences, at least at this stage of their development.)

With that definition at hand, a definition of science fiction becomes fairly easy—but not all current practitioners, however large their debt to Mr. Gernsback, quite agree that the field should be so strictly limited. Gordon R. Dickson happened to drop by the office the next day, and offered some comments, which we asked him to write down: "While I think anyone would agree with the idea that science fiction is deeply connected with science and science futures, I can't help thinking that to insist on this connection invariably would be to put too narrow a definition on the field. Not only the eye turned outward to the logical developments of present scientific actualities, but the eye turned inward speculatively to the essential nature and character of Man himself —his culture, his societies, even his present-day attitudes—is a legitimate organ of the science fiction animal. The speed with which hard science these last few years has threatened to outstrip—if it has not in many cases already outstripped—the hard science fiction of even a decade ago has perhaps done us all a greater favor than we realize in forcing us into this later area of human self-examination. For there is more betwixt heaven and hell than is dreamt of in all your philosophies of logical science. And both heaven and hell are encompassed within the vast inner universe of every living man."

F&SF is not directly involved in the search for an ultimate definition of science fiction—in this issue, characteristically, there is a variety of speculative and imaginative fiction, some scientific, some not. We will offer the opinion, however, that it all comes down to your definition of *science,* and that the field must necessarily grow as knowledge inevitably increases.

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The storm was violent, raging, and the Yanda was old and weakened. What last useful thing could it do while life remained?

HYBRID

by Keith Laumer

DEEP IN THE SOIL OF THE PLANET, rootlets tougher than steel wire probed among glassy sand grains, through packed veins of clay and layers of flimsy slate, sensing and discarding inert elements, seeking out calcium, iron, nitrogen.

Deeper still, a secondary system of roots clutched the massive face of the bedrock; sensitive tendrils monitored the minute trembling in the planetary crust, the rhythmic tidal pressures, the seasonal weight of ice, the footfalls of the wild creatures that hunted in the mile-wide shadow of the giant Yanda tree.

On the surface far above, the immense trunk, massive as a cliff, its vast girth anchored by mighty buttresses, reared up nine hundred yards above the prominence, spreading huge limbs in the white sunlight.

The tree was only remotely aware of the movement of air over the polished surfaces of innumerable leaves, the tingling exchange of molecules of water, carbon dioxide, oxygen. Automatically it reacted to the faint pressures of the wind, tensing slender twigs to hold each leaf at a constant angle to the radiation that struck down through the foliage complex.

The long day wore on. Air flowed in intricate patterns; radiation waxed and waned with the drift of vapor masses in the substratosphere; nutrient molecules moved along capillaries; the rocks groaned gently in the dark under the shaded slopes. In the invulnerability of its titanic mass, the tree dozed in a state of generalized low-level consciousness.

The sun moved westward. Its light, filtered through an increasing depth of atmosphere, was an ominous yellow now. Sinewy twigs rotated, following the source of energy. Somnolently, the tree retracted tender buds against the increasing cold, adjusted its rate of heat and moisture loss, its re-

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ceptivity to radiation. As it slept, it dreamed of the long past, the years of free-wandering in the faunal stage, before the instinct to root and grow had driven it here. It remembered the grove of its youth, the patriarchal tree, the spore-brothers. . . .

It was dark now. The wind was rising. A powerful gust pressed against the ponderous obstacle of the tree; great thews of major branches creaked, resisting; chilled leaves curled tight against the smooth bark.

Deep underground, fibres hugged rock, transmitting data which were correlated with impressions from distant leaf surfaces. There were ominous vibrations from the north east; relative humidity was rising, air pressure falling—A pattern formed, signalling danger. The tree stirred; a tremor ran through the mighty branch system, shattering fragile frost crystals that had begun to form on shaded surfaces. Alertness stirred in the heart-brain, dissipating the euphoric dream-pattern. Reluctantly, long dormant faculties came into play. The tree awoke.

Instantly, it assessed the situation. A storm was moving in off the sea—a major typhoon. It was too late for effective measures. Ignoring the pain of unaccustomed activity, the tree sent out new shock roots—cables three inches in diameter, strong as stranded steel—to grip the upreared rock slabs a hundred yards north of the tap root.

There was nothing more the tree could do. Impassively, it awaited the onslaught of the storm.

"That's a storm down there," Malpry said.

"Don't worry, we'll miss it." Gault fingered controls, eyes on dial faces.

"Pull up and make a new approach," Malpry said, craning his neck from his acceleration cradle.

"Shut up. I'm running this tub."

"Locked in with two nuts," Malpry said. "You and the creep."

"Me and the creep are getting tired of listening to you bitch, Mal."

"When we land, Malpry, I'll meet you outside," Pantelle said. "I told you I don't like the name 'Creep'."

"What, again?" Gault said. "You all healed up from the last time?"

"Not quite; I don't seem to heal very well in space."

"Permission denied, Pantelle," Gault said. "He's too big for you. Mal, leave him alone."

"I'll leave him alone," Malpry muttered. "I ought to dig a hole and leave him in it. . . ."

"Save your energy for down there," Gault said. "If we don't make a strike on this one, we've had it."

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"Captain, may I go along on the field reconnaissance? My training in biology—"

"You better stay with the ship, Pantelle. And don't tinker. Just wait for us. We haven't got the strength to carry you back."

"That was an accident, Captain—"

"And the time before. Skip it, Pantelle. You mean well, but you've got two left feet and ten thumbs."

"I've been working on improving my coordination, Captain. I've been reading—"

The ship buffetted sharply as guidance vanes bit into atmosphere; Pantelle yelped.

"Oh-oh," he called. "I'm afraid I've opened up that left elbow again."

"Don't bleed on me, you clumsy slob," Malpry said.

"Quiet!" Gault said between his teeth. "I'm busy."

Pantelle fumbled a handkerchief in place over the cut. He would have to practice those relaxing exercises he had read about. And he would definitely start in weight-lifting soon—and watching his diet. And he would be very careful this time and land at least one good one on Gault, just as soon as they landed.

Even before the first outward signs of damage appeared, the tree knew that it had lost the battle against the typhoon. In the lull as the eye of the storm passed over, it assessed the damage. There was no response from the north-east quadrant of the sensory network where rootlets had been torn from the rock face; the tap root itself seated now against pulverized stone. While the almost indestructible fibre of the Yanda tree had held firm, the granite had failed. The tree was doomed by its own mass.

Now, mercilessly, the storm struck again, thundering out of the south-west to assault the tree with blind ferocity. Shock cables snapped like gossamer; great slabs of rock groaned and parted, with detonations lost in the howl of the wind. In the trunk, pressures built, agonizingly.

Four hundred yards south of the tap root, a crack opened in the sodden slope, gaping wider. Wind-driven water poured in, softening the soil, loosening the grip of a million tiny rootlets. Now the major roots shifted, slipping. . . .

Far above, the majestic crown of the Yanda tree yielded imperceptibly to the irresistible torrent of air. The giant north buttress, forced against the underlying stone, shrieked as tortured cells collapsed, then burst with a shattering roar audible even above the storm. A great arc of earth to the south, uplifted by exposed roots, opened a gaping cavern.

Now the storm moved on,

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thundered down the slope trailing its retinue of tattered debris and driving rain. A last vengeful gust whipped branches in a final frenzy; then the victor was gone.

And on the devastated promontory, the stupendous mass of the ancient tree leaned with the resistless inertia of colliding moons to the accompaniment of a cannonade of parting sinews, falling with dream-like grace.

And in the heart-brain of the tree, consciousness faded in the unendurable pain of destruction.

Pantelle climbed down from the open port, leaned against the ship to catch his breath. He was feeling weaker than he expected. Tough luck, being on short rations; this would set him back on getting started on his weight-lifting program. And he didn't feel ready to take on Malpry yet. But just as soon as he had some fresh food and fresh air—

"These are safe to eat," Gault called, wiping the analyzer needle on his pants leg and thrusting it back into his hip pocket. He tossed two large red fruits to Pantelle.

"When you get through eating, Pantelle, you better get some water and swab down the inside. Malpry and I'll take a look around."

The two moved off. Pantelle sat on the springy grass, and bit into the apple-sized sphere. The texture, he thought, was reminiscent of avocado. The skin was tough and aromatic; possibly a natural cellulose acetate. There seemed to be no seeds. That being the case, the thing was not properly a fruit at all. It would be interesting to study the flora of this planet. As soon as he reached home, he would have to enroll in a course in E.T. botany. Possibly he would go to Heidelberg or Uppsala, attend live lectures by eminent scholars. He would have a cosy little apartment—two rooms would do—in the old part of town, and in the evening he would have friends in for discussions over a bottle of wine—

However, this wasn't getting the job done. There was a glint of water across the slope. Pantelle finished his meal, gathered his buckets, and set out.

"Why do we want to wear ourselves out?" Malpry said.

"We need the exercise. It'll be four months before we get another chance."

"What are we, tourists, we got to see the sights?" Malpry stopped, leaned against a boulder, panting. He stared upward at the crater and the pattern of uptilted roots and beyond at the forest-like spread of the branches of the fallen tree.

"Makes our sequoias look like dandelions," Gault said. "It must have been the storm, the one we dodged coming in."

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"So what?"

"A thing that big—it kind of does something to you."

"Any money in it?" Malpry sneered.

Gault looked at him sourly. "Yeah, you got a point there. Let's go."

"I don't like leaving the Creep back there with the ship."

Gault looked at Malpry. "Why don't you lay off the kid?"

"I don't like loonies."

"Don't kid me, Malpry. Pantelle is highly intelligent—in his own way. Maybe that's what you can't forgive."

"He gives me the creeps."

"He's a nice-looking kid; he means well—"

"Yeah," Malpry said. "Maybe he means well—but it's not enough . . ."

From the delirium of concussion, consciousness returned slowly to the tree. Random signals penetrated the background clatter of shadowy impulses from maimed senses—

"Air pressure zero; falling . . . air pressure 112, rising . . . air pressure negative . . .

"Major tremor radiating from—Major tremor radiating from—

"Temperature 171 degrees, temperature —40 degrees, temperature 26 degress . . .

"Intense radiation in the blue only . . . red only . . . ultra violet . . .

"Relative humidity infinite . . . wind from north-northeast, velocity infinite . . . wind rising vertically, velocity infinite . . . wind from east, west . . ."

Decisively, the tree blanked off the yammering nerve-trunks, narrowing its attention to the immediate status-concept. A brief assessment sufficed to reveal the extent of its ruin.

There was no reason, it saw, to seek extended personal survival. However, certain immediate measures were necessary to gain time for emergency spore-propagation. At once, the tree-mind triggered the survival syndrome. Capillaries spasmed, forcing vital juices to the brain. Synaptic helices dilated, heightening neural conductivity. Cautiously, awareness was extended to the system of major fibres, then to individual filaments and interweaving capillaries.

Here was the turbulence of air molecules colliding with ruptured tissues, the wave pattern of light impinging on exposed surfaces. Microscopic filaments contracted, cutting off fluid loss through the wounds.

Now the tree-mind fine-tuned its concentration, scanning the infinitely patterned cell matrix. Here, amid confusion, there was order in the incessant restless movement of particles, the flow of fluids, the convoluted intricacy of the alphaspiral. Delicately, the tree-mind readjusted the function-

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mosaic, in preparation for spore generation.

Malpry stopped, shaded his eyes. A tall thin figure stood in the shade of the uptilted root mass on the ridge.

"Looks like we headed back at the right time," Malpry said.

"Damn," Gault said. He hurried forward. Pantelle came to meet him.

"I told you to stay with the ship, Pantelle!"

"I finished my job, Captain. You didn't say—"

"OK, OK. Is anything wrong?"

"No sir. But I've just remembered something—"

"Later, Pantelle. Let's get back to the ship. We've got work to do."

"Captain, do you know what this is?" Pantelle gestured toward the gigantic fallen tree.

"Sure; it's a tree." He turned to Gault. "Let's—"

"Yes, but what kind?"

"Beats me. I'm no botanist."

"Captain, this is a rare species. In fact, it's supposed to be extinct. Have you ever heard of the Yanda?"

"No. Yes." Gault looked at Pantelle. "Is that what this is?"

"I'm sure of it. Captain, this is a very valuable find—"

"You mean it's worth money?" Malpry was looking at Gault.

"I don't know. What's the story, Pantelle?"

"An intelligent race, with an early animal phase; later, they root, become fixed, functioning as a plant. Nature's way of achieving the active competition necessary for natural selection, then the advantage of conscious selection of a rooting site."

"How do we make money on it?"

Pantelle looked up at the looming wall of the fallen trunk, curving away among the jumble of shattered branches, a hundred feet, two hundred, more, in diameter. The bark was smooth, almost black. The foot-wide leaves were glossy, varicolored.

"This great tree—"

Malpry stooped, picked up a fragment from a burst root.

"This great club," he said, "to knock your lousy brains out with—"

"Shut up, Mal."

"It lived, roamed the planet perhaps ten thousand years ago, in the young faunal stage. Then instinct drove it here, to fulfill the cycle of nature. Picture this ancient champion, looking for the first time out across the valley, saying his farewells as metamorphosis begins."

"Nuts," Malpry said.

"His was the fate of all males of his kind who lived too long, to stand forever on some height of land, to remember through unending ages the brief glory of youth, himself his own heroic monument."

"Where do you get all that crud?" Malpry said.

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"Here was the place," Pantelle said. "Here all his journeys ended."

"OK, Pantelle. Very moving. You said something about this thing being valuable."

"Captain, this tree is still alive, for a while at least. Even after the heart is dead, the appearance of life will persevere. A mantle of new shoots will leaf out to shroud the cadaver, tiny atavistic plantlets without connection to the brain, parasitic to the corpse, identical to the ancestral stock from which the giants sprang, symbolizing the extinction of a hundred million years of evolution."

"Get to the point."

"We can take cuttings from the heart of the tree. I have a book—it gives the details on the anatomy—we can keep the tissues alive. Back in civilization, we can regenerate the tree—brain and all. It will take time—"

"Suppose we sell the cuttings."

"Yes, any university would pay well—"

"How long will it take?"

"Not long. We can cut in with narrow aperture blasters—"

"OK. Get your books, Pantelle. We'll give it a try."

Apparently, the Yanda mind observed, a very long time had elapsed since spore propagation had last been stimulated by the proximity of a female. Withdrawn into introverted dreams, the tree had taken no conscious notice as the whispering contact with the spore-brothers faded and the host-creatures dwindled away. Now, eidetically, the stored impressions sprang into clarity.

It was apparent that no female would pass this way again. The Yanda kind was gone. The fever of instinct that had motivated the elaboration of the mechanisms of emergency propagation had burned itself out futilely. The new pattern of stalked oculi gazed unfocussed at an empty vista of gnarled jungle growth, the myriad filaments of the transfer nexus coiled quiescent, the ranked grasping members that would have brought a host-creature near drooped unused, the dran-sacs brimmed needlessly; no further action was indicated. Now death would come in due course.

Somewhere a drumming began, a gross tremor sensed through the dead hush. It ceased, began again, went on and on. It was of no importance, but a faint curiosity led the tree to extend a sensory filament, tap the abandoned nerve-trunk—

Convulsively, the tree-mind recoiled, severing the contact. An impression of smouldering destruction, impossible thermal activity. . . .

Disoriented, the tree-mind considered the implications of the searing pain. A freak of damaged sense organs? A phantom impulse from destroyed nerves?

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No. The impact had been traumatic, but the data were there. The tree-mind re-examined each synaptic vibration, reconstructing the experience. In a moment, the meaning was clear: A fire was cutting deep into the body of the tree.

Working hastily, the tree assembled a barrier of incombustible molecules in the path of the fire, waited. The heat reached the barrier, hesitated—and the barrier flashed into incandescence.

A thicker wall was necessary.

The tree applied all of its waning vitality to the task. The shield grew, matched the pace of the fire, curved out to intercept—

And wavered, halted. The energy demand was too great. Starved muscular conduits cramped. Blackness closed over the disintegrating consciousness.

Sluggishly, clarity returned. Now the fire would advance unchecked. Soon it would by-pass the aborted defenses, advance to consume the heart-brain itself. There was no other countermeasure remaining. It was unfortunate, since propagation had not been consummated, but unavoidable. Calmly the tree awaited its destruction by fire.

Pantelle put the blaster down, sat on the grass and wiped tarry soot from his face.

"What killed 'em off?" Malpry asked suddenly.

Pantelle looked at him.

"Spoilers," he said.

"What's that?"

"They killed them to get the *dran*. They covered up by pretending the Yanda were a menace, but it was the *dran* they were after."

"Don't you ever talk plain?"

"Malpry, did I ever tell you I didn't like you?"

Malpry spat. "What's with this *dran?*"

"The Yanda have a very strange reproductive cycle. In an emergency, the spores released by the male tree can be implanted in almost any warm-blooded creature and carried in the body for an indefinite length of time. When the host animal mates, the dormant spores come into play. The offspring appears perfectly normal; in fact, the spore steps in and corrects any defects in the individual, repairs injuries, fights disease, and so on; and the life-span is extended; but eventually, the creature goes through the metamorphosis, roots, and becomes a regular male Yanda tree—instead of dying of old age."

"You talk too much. What's this *dran?*"

"The tree releases an hypnotic gas to attract host animals. In concentrated form, it's a potent narcotic. That's *dran*. They killed the trees to get it. The excuse was that the Yanda could make humans give birth to monsters. That was nonsense. But it sold in the black market for fabulous amounts."

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"How do you get the *dran?*"

Pantelle looked at Malpry. "Why do you want to know?"

Malpry looked at the book which lay on the grass. "It's in that, ain't it?"

"Never mind that. Gault's orders were to help me get the heart-cuttings."

"He didn't know about the *dran.*"

"Taking the *dran* will kill the specimen. You can't—"

Malpry stepped toward the book. Pantelle jumped toward him, swung a haymaker, missed. Malpry knocked him spinning.

"Don't touch me, Creep." He wiped his fist on his pants leg.

Panelle lay stunned. Malpry thumbed the book, found what he wanted. After ten minutes, he dropped the book, picked up the blaster, and moved off.

Malpry cursed the heat, wiping at his face. A many-legged insect scuttled away before him. Underfoot, something furtive rustled. One good thing, no animals in this damned woods bigger than a mouse. A hell of a place. He'd have to watch his step; it wouldn't do to get lost in here . . .

The velvety wall of the half buried trunk loomed, as dense growth gave way suddenly to a clear stretch. Malpry stopped, breathing hard. He got out his sodden handkerchief, staring up at the black wall. A ring of dead-white stalks sprouted from the dead tree. Nearby were other growths, like snarls of wiry black seaweed, and ropy looking things, dangling—

Malpry backed away, snarling. Some crawling disease, some kind of filthy fungus— But—

Malpry stopped. Maybe this was what he was looking for. Sure, this was what those pictures in the book showed. This was where the *dran* was. But he didn't know it would look like some creeping—

"Stop, Malpry!"

Malpry whirled.

"Don't be to . . . stupid . . ." Pantelle was gasping for breath. There was a bruise on his jaw. "Let me rest . . . Talk to you . . ."

"Die, you gutter-scraping. Have a nice long rest. But don't muck with me." Malpry turned his back on Pantelle, unlimbered the blaster.

Pantelle grabbed up a broken limb, slammed it across Malpry's head. The rotten wood snapped. Malpry staggered, recovered. He turned, his face livid; a trickle of blood ran down.

"All right, Creep," he grated. Pantelle came to him, swung a whistling right, arm bent awkwardly. Malpry lunged, and Pantelle's elbow caught him across the jaw. His eyes went glassy, he sagged, fell to his hands and knees. Pantelle laughed aloud.

Malpry shook his head, breathing hoarsely, got to his feet. Pan-

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telle took aim and hit him solidly on the jaw. The blow seemed to clear Malpry's head. He slapped a second punch aside, knocked Pantelle full-length with a backhanded blow. He dragged Pantelle to his feet, swung a hard left and right. Pantelle bounced, lay still. Malpry stood over him, rubbing his jaw.

He stirred Pantelle with his foot. Maybe the Creep was dead. Laying his creeping hands on Malpry. Gault wouldn't like it, but the Creep had started it. Sneaked up and hit him from behind. He had the mark to prove it. Anyway, the news about the *dran* would cheer Gault up. Better go get Gault up here. Then they could cut the *dran* out and get away from this creeping planet. Let the Creep bleed.

Malpry turned back toward the ship, leaving Pantelle huddled beside the fallen tree.

The Yanda craned external oculi to study the fallen creature, which had now apparently entered a dormant phase. A red exudation oozed from orifices at the upper end, and from what appeared to be breaks in the epidermis. It was a strange creature, bearing some superficial resemblance to the familiar host-creatures. Its antics, and those of the other, were curious indeed. Perhaps they were male and female, and the encounter had been a mating. Possibly this hibernation was normal process, preparatory to rooting. If only it were not so alien, it might serve as a carrier . . .

The surface of the organism heaved, a limb twitched. Apparently it was on the verge of reviving. Soon it would scurry away and be seen no more. It could be wise to make a quick examination; if the creature should prove suitable as a host. . . .

Quickly the tree elaborated a complex of tiny filaments, touched the still figure tentatively, then penetrated the surprisingly soft surface layer, seeking out nerve fibres. A trickle of impressions flowed in, indecipherable. The tree put forth a major sensory tendril, divided and subdivided it into fibres only a few atoms in diameter, fanned them out through the unconscious man, tracing the spinal column, entering the brain—

Here was a wonder of complexity, an unbelievable profusion of connections. This was a center capable of the highest intellectual functions—unheard of in a host creature. Curiously, the tree-mind probed deeper, attuning itself, scanning through a kaliedoscope of impressions, buried memories, gaudy symbolisms.

Never had the Yanda-mind encountered the hyper-intellectual processes of emotion. It pressed on, deeper into the phantas-magoria of dreams—

Color, laughter, and clash-of-arms. Banners rippling in the sun,

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chords of a remote music, and night-blooming flowers. Abstractions of incredible beauty mingled with vivid conceptualizations of glory. Fascinated, the tree-mind explored Pantelle's secret romantic dreams of fulfillment—

And abruptly, encountered the alien mind.

There was a moment of utter stillness as the two minds assessed each other.

You are dying, the alien mind spoke.

Yes. And you are trapped in a sickly host-creature. Why did you not select a stronger host?

I . . . originated here. I . . . we *. . . are one.*

Why do you not strengthen this host?

How?

The Yanda mind paused. *You occupy only a corner of the brain. You do not use your powers?*

I am a segment. . . . The alien mind paused, confused. *I am conceptualized by the monitor-mind as the subconscious.*

What is the monitor-mind?

It is the totality of the personality. It is above the conscious, directing. . . .

This is a brain of great power, yet great masses of cells are unused. Why are major trunks aborted as they are?

I do not know.

There was no more information from the alien brain which indeed, housed multiple minds.

The Yanda mind broke contact, tuned.

There was a blast of mind-force, overwhelming. The Yanda-mind reeled, groped for orientation.

YOU ARE NOT ONE OF MY MINDS.

You are the monitor-mind? gasped the Yanda.

YES. WHAT ARE YOU?

The Yanda-mind projected its self-concept.

STRANGE, VERY STRANGE. YOU HAVE USEFUL SKILLS, I PERCEIVE. TEACH THEM TO ME.

The Yanda mind squirmed under the torrent of thought impulses.

Reduce your volume. You will destroy me.

I WILL TRY. TEACH ME THAT TRICK OF MANIPULATING MOLECULES.

The Yanda cringed under the booming of the alien mind. What an instrument! A fantastic anomaly, a mind such as this linked to this fragile host-creature—and unable even to use its powers. But it would be a matter of the greatest simplicity to make the necessary corrections, rebuild and toughen the host, eliminate the defects—

TEACH ME, YANDA MIND!

Alien, I die soon. But I will teach you. There is, however, a condition. . . .

The two minds conferred, and reached agreement. At once, the

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Yanda mind initiated sweeping rearrangements at the submolecular level.

First, cell-regeneration, stitching up the open lesions on arm and head. Antibodies were modified in vast numbers, flushed through the system. Parasites died.

Maintain this process, the tree-mind directed.

Now, the muscular layers; surely they were inadequate. The very structure of the cells was flimsy. The Yanda devised the necessary improvements, tapped the hulk of its cast-off body for materials, reinforced the musculature. Now for the skeletal members. . . .

The tree visualized the articulation of the ambulatory mechanism, considered for a moment the substitution of a more practical tentacular concept—

There was little time. Better to retain the stony bodies, merely strengthen them, using metallo-vegetable fibres. The air sacs, too. And the heart. They would have lasted no time at all as they were.

Observe, alien, thus, and thus. . . .

I SEE. IT IS A CLEVER TRICK.

The Yanda worked over the body of Pantelle, adjusting, correcting, reinforcing, discarding a useless appendix or tonsil here, adding a reserve air storage unit there. A vestigal eye deep in the brain was refurbished for sensitivity at the radio frequencies, linked with controls. The spine was deftly fused at the base; additional mesenteries were added for intestinal support. Following the basic pattern laid down in the genes, the tree-mind rebuilt the body.

When the process was finished, and the alien mind had absorbed the techniques demonstrated, the Yanda mind paused.

It is finished.

I AM READY TO RE-ESTABLISH THE CONSCIOUS MIND IN OVERT CONTROL.

Remember your promise.

I WILL REMEMBER.

The Yanda mind began its withdrawal. Troublesome instinct was served. Now it could rest until the end.

WAIT. I'VE GOT A BETTER IDEA, YANDA. . . .

"Two weeks down and fourteen to go," Gault said. "Why don't you break down and tell me what happened back there?"

"How's Malpry?" Pantelle asked.

"He's all right. Broken bones knit, and you only broke a few."

"The book was wrong about the Yanda spores," Pantelle said. "They don't have the power in themselves to reconstruct the host-creature—"

"The what?"

"The infected animal; the health and life span of the host is improved. But the improvement is

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made by the tree, at the time of propagation, to insure a good chance for the spores."

"You mean you—"

"We made a deal. The Yanda gave me this—" Pantelle pressed a thumb against the steel bulkhead. The metal yielded.

"—and a few other tricks. In return, I'm host to the Yanda spores."

Gault moved away.

"Doesn't that bother you? Parasites—"

"It's an equitable deal. The spores are microscopic, and completely dormant until the proper conditions develop."

"Yeah, but you said yourself this vegetable brain has worked on your mind."

"It merely erased all the scars of traumatic experience, corrected deficiencies, taught me how to use what I have."

"How about teaching me?"

"Sorry, Gault." Pantelle shook his head. "Impossible."

Gault considered Pantelle's remarks.

"What about these 'proper conditions' for the spores?" he asked suddenly. "You wake up and find yourself sprouting some morning?"

"Well," Pantelle coughed. "That's where my part of the deal comes in. A host creature transmits the spores through the normal mating process. The offspring gets good health and a long life before the metamorphosis. That's not so bad—to live a hundred years, and then pick a nice spot to root and grow and watch the seasons turn . . ."

Gault considered. "A man does get tired," he said. "I know a spot, where you can look for miles out across the Pacific . . ."

"So I've promised to be very active," Pantelle said. "It will take a lot of my time, but I intend to discharge my obligation to the fullest."

Did you hear that, Yanda? Pantelle asked silently.

I did, came the reply from the unused corner he had assigned to the Yanda ego-pattern. *Our next thousand years should be very interesting.*

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Getting hold of tomorrow's newspaper today—a tried and true method for acquiring riches quickly and surely . . . and also a most familiar story. In the hands of Walter Tevis however (remember his "Far From Home," concerning a whale in a swimming pool?), the old becomes most satisfyingly new . . . .

THE OTHER END OF THE LINE

by Walter Tevis

HUNGOVER FROM CHEAP WHISkey, George Bledsoe made a simple error that many people make: he mistakenly dialled his own number on the telephone. He was attempting to call a girl he knew—a homely girl, but one with the virtues of being quick and easy—and, through his customary impatience and general fogginess, let the wrong pattern of digits govern his pudgy index finger: BE-8-5883.

He did not get the busy signal. He should have; but he did not. Instead, the phone began clicking loudly and an operator's voice announced dimly, as if from a great distance, "That's a ship-to-shore connection, sir." George Bledsoe, just then realising that he *had,* in fact, stupidly dialled his own number, said, "What the hell?" There was a great deal of static and then, quite clearly, a man's voice said, "All right. Who is it?"

George blinked. The voice was loud and arrogant. It sounded somehow familiar, but he could not place it.

But George was not by nature a deferential person. "Who in hell are *you,* friend?" he said.

The voice paused a moment and then it said, clearly, "This is George Bledsoe."

"Look, friend," George Bledsoe said, "You can take that and . . ." He started to hang up and then stopped. *How could . . .* ?

"That's right," the voice said, mockingly, "How could I *know?*" And then, "You let it sink in a minute, Georgie, and then you get that tablet of paper out of the top dresser drawer and get yourself a pencil out of the box on the refrigerator and you get ready to write some things down. We don't have all day."

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George was staring at the phone in disbelief. It *was* his voice, as if on a tape recorder. He blinked, and found himself sweating. But, unused to taking orders, he said, "Why should I?"

"Don't argue, dammit. I'm talking to you from October ninth. I'm sitting in a boat, twenty-eight miles and two months from where you are and I've got a pile of newspapers, Georgie, that haven't even been printed yet, back there in August where you're talking from. I'm going to make you rich."

It sounded like a con game. George's eyes narrowed. "Why should you?"

"Because I'm you, you stupid bastard. Get that paper and start writing. I'm going to give you the names of some racehorses and of three issues of stocks. And a baseball team. You'd better get them right the first time. There won't be another."

George was staring around the room dizzily; the hand that held the phone was sticky with sweat. "How can . . . ?"

"Dammit, shut up. *I* don't know how. It just is."

He got the notepad, and got them all down. Twenty-six racehorses and three stocks and the ball team that was going to win the World Series. Then the phone clicked and the line went dead. Thoroughly dead; he could not even get the dial tone.

There were three horses on his list for the next day. They were all medium-long shots, and they all won. He had started with fifty dollars; he left the track in a kind of cold, glassy-eyed frenzy, with over seven thousand dollars in cash in his pockets. In his shirt pocket, over his heart, was the sheet of notepaper, his greatest gift in the world—a gift from himself.

During the next two months the horses all won at their different tracks and the stocks all split, shot up, declared unexpected dividends. By nosing out the wealthiest bookies at home, in Miami, and in four other cities, and by careful spreading of his bets, George was able to make himself a millionaire after the first five weeks. He won a quarter million on the World Series alone. It was on this last that a bookie who hadn't hedged his bets adequately against George's hundred thousand dollar lay-out was forced to offer him his own luxury fishing boat, anchored off Key West, as part payment. George, seeing the handwriting on the wall plainly enough, accepted with what was for him considerable graciousness. That is, he merely called the bookie a chiseling bastard, trimmed five thousand off the boat's evaluation, and took it.

He knew that it was somehow in the nature of things that he

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must be aboard a boat with a telephone on October ninth. He would be getting a phone call.

The ordaining of it all took no effort on his part. He was called a week later by the telephone company, who wished to know if he planned to continue the ship-to-shore service on the boat. He told them yes, and then, as if were an afterthought, mentioned that he would like his old Miami number transferred to the boat—important friends would be calling. The number? BE-8-5883. Then, when he had bet the final horse on his list, betting the track odds down to the point of diminishing returns, phoning and nagging the nine remaining New York and Chicago bookies who would still take his bets, he hired a chauffeured limousine to take him to Key West. He did not go alone; with him were two attractive young ladies, a gambling friend, a large box of frozen prime steaks, and two cases of twelve-dollar-a-bottle whiskey. And a pile of newspapers.

It was during the ebullient stage of his drunkenness on this automobile ride, after he had tired of needling his friends, that a striking thought occurred to him: what if he decided not to go to the boat at all? His mind fogged at the thought. But how could he *not* be on that boat October ninth? He had, in a sense, already been there. That part of his future was a part of his past, and you couldn't change the past. But you could change the future, couldn't you? He could not understand it. He drank more whiskey and tried to forget about it; it wasn't important anyway. What was important was his four-hundred dollar platinum wristwatch, his sixty-dollar shoes, his cashmere jacket, his bank accounts. He had come a long way in those two months. One of the girls, whose name was supposed to be Lili, snuggled up to him. He began playing with her and tried to forget about time paradoxes.

The boat looked to George like something out of a Man of Distinction ad; it was big, sleek, polished, and beautifully equipped. His heart swelled with something resembling pride when he surveyed its lines, standing drunkenly on the dock, with a dishevelled Lili hanging on his arm. They went aboard, and Lili giggled, and whistled at the mahogany bar, the innerspring mattresses, the hi-fi, the impeccable little stainless steel galley. George, suddenly pensive, left Lili fixing drinks at the bar for the party and went into the boat's little air-conditioned cabin, to look around.

Somehow the sight of it shook him: sitting on a small table, next to a tan leather armchair, was a bright, glossy, red telephone. He walked over to it slowly and read

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the number on the dial. The man from the company had been there, for it read MIAMI: BE-8-5883. Outside on the deck the girls were laughing now, and there was the sound of ice clinking in glasses. Someone called out drunkenly, "Come on out Georgie and have a *bon voyage.*" but he didn't answer, still looking at the phone.

A pilot had been hired and he took them out that afternoon. They fished in a desultory way, too drunk and noisy to care. George drank continuously, bullied everyone loudly, made no attempt to fish. A restlessness, an impatience, was eating at him; in his mind telephones were ringing faintly all day. By sundown of the first day they were spent with liquor, sex, sunshine and quarrelling. George passed out across the deck, near the one fish that Lili had, miraculously, caught: a small, wide-eyed Bonito with a white flabby belly. The last fleeting thought to enter his mind befor he fell into smirking unconsciousness was *Why can't that lousy son of a bitch call me early? Why should I wait?..*

The ninth of October was overcast—cold and muggy—as was George's disposition. No one was any longer interested in fishing. The gambler slept; the girls kept to themselves on deck; and George shut himself up in the cabin, waiting for the phone to ring. He swore under his breath occasionally, but otherwise passed the morning in silence. He contemplated the luxury of his silk dressing gown, the brass and mahogany furnishings around him, the good, solid teakwood deck beneath his feet; and the thought of the virtually penniless and belligerent drunkard who was about to call him from a crumby little beach house at Miami. At his feet sat the pile of newspapers, opened to the sporting pages. He looked down at them now and swore. He was beginning to sweat.

Outside the cabin window the sky was dead white, hanging thickly over the cold green Atlantic horizon. They were ninety miles out from shore, the pilot had said. George continued drinking, angry now at himself—the other himself—for not having bothered to mention the time of day his call had been received. He had dialled the number at about two in the afternoon; but of course that didn't mean that two o'clock was the time it was received, two months later. He continued looking at his watch and at the telephone and at his watch again, drinking. Occasionally he would look out the window at the serenely violent ocean, ice green beneath the fishbelly sky, and curse.

And then, just before two o'clock, an idea struck him, a very simple idea: Why should *he*

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wait? He would make the call himself. He had never, in the two months since it had happened, tried dialling his own number again—why had he never thought of it? Why should he wait for that poor slob of a hung-over George Bledsoe to call *him*—him with his private fishing boat and his twelve dollar whiskey?

He picked up the phone angrily, with thick fingers, and began dialling: BE-8-5883. He was breathing heavily. After the last digit the phone began to buzz, ringing. He smiled sweatily and leaned back in his chair. Then there was a *click* and a voice answered. "Hello?"

He sat bolt upright in his chair. It was a woman's voice.

He hesitated and then said, "Hello." *Could he have dialled the wrong number?* "What number is this?"

The voice was that of an old woman, quavery but matter-of-fact. "This is BE-8-5883. Mrs. Arthur Cavanaugh talking."

"Oh." He took a quick sip from his drink. "Is . . . is George Bledsoe there?"

"No. No he isn't." There seemed to be some hesitation in her voice. "Mr. Bledsoe hasn't lived in this house for some time."

Abruptly he felt relieved—he had probably only moved to a bigger home. About time, anyway. But why had he been frightened of this old bat on the phone?

The woman was saying querously, "Are you a friend . . . of Mr. Bledsoe's?"

He laughed suddenly, coarsely, "That's right, lady. I'm a friend of Mr. Bledsoe's."

"Well I don't know just how to tell you this," the woman said, "But a person would have thought you'd read about it in the papers. It was in all the papers. They found Mr. Bledsoe's body, stark naked, a hundred miles out in the Gulf. It was about two months ago they found him, and the thing is there's nobody yet knows how he got out there."

He sat silent for what seemed a very long time. There seemed to be a faint clicking in the phone, but he ignored this. The woman must be mistaken. An old fool. A bitch. Although the cabin was tightly closed, he felt the distinct sensation of a cold wind blowing on the back of his neck. Shaking himself, he gathered his voice together. The woman was a lying bitch. "How George Bledsoe got out there, lady, was in his private boat," he said, more to himself than to her, "The same way he's gonna get back to shore. In his private boat."

The wind on the back of his neck was stronger now, and he was shivering. The wind seemed to be penetrating his clothes, even, blowing through his dressing gown, through the tailored silk shirt beneath it. Dimly, as if from

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a great and dreadful distance, he heard the old woman's voice saying, "Why Mr. Bledsoe never had a boat, Lord forbid. Mr. Bledsoe was a poor man . . ."

Abruptly he leaned forward, shouting, *"No.* No, you rotten bitch!" and he slammed the phone back in its cradle. It was cold in the room. He was shivering. There was a bright, grayish light in the cabin, getting brighter. He grabbed the phone again, shaking, and dialled O, for the operator. The dial felt soft to his finger, squashy.

The operator's voice came, faint, "Ship-to-shore service."

His voice was hoarse, strange in his ears. "This is Bledsoe. BE-8-5883. Is there a call for me?"

"No sir. Or, yes, there was a call."

"From who?" It took an effort to keep from shouting—or screaming.

"Just a moment." And then, "That's odd sir; it must be an error. I have the number calling listed as BE-8-5883. And that's your number, sir."

"My God, I know. Put the call through."

Her voice was fainter, fading away from him. "I'm sorry, you'll have to wait until the party calls again. When he called, a few moments ago, the line was busy . . ." The last words were so faint that he could hardly hear them. He was screaming when she finished, *"Put the call through, God damn it, put the call through."*

From the receiver her voice was the minute thread of a whisper, but he heard it plainly, "I'm sorry sir, the line was busy."

And then the phone went altogether dead.

Then, after sitting for a moment with his eyes shut against the impossible white daylight in the closed cabin, his body huddled against the cold wind that was blowing through the bulkheads of the rich man's boat that he could not possibly have been in, blowing coldly against his body through the rich man's clothes that he, George Bledsoe, could not possibly have afforded, he took a deep breath and opened his eyes, looking down.

Below him, through the fading, now translucent teakwood deck, he could see the flat, ice-green water of the Atlantic Ocean, ninety miles from shore.

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Cat lovers will know that this story is nonsense; non-cat lovers, objective observers of that altogether unknowable, alien creature, may be led to cast an uneasy glance from time to time at the black limbo that lurks above us . . . .

THE INTERPLANETARY CAT

by Rick Rubin

SHE WAS WEANED TOO EARLY. While her sister and brother kittens were still being slapped down by their mother for trying to chew up everything in sight, Sumi was chewing at will. By the time she was two months old she had created a fine network of scars on Jim and Stella Warren's hands, arms and legs, and administered clawings to every piece of furniture in the house. Stella was perpetually out of nylons.

Sumi was half Siamese, from her mother, with brown-grey ears, tail and paws. Her body was pearly grey-white, her eyes were blue with minute flecks of green, grey and yellow near their centers. Her male parent was unknown, but from the way Sumi bit, Jim and Stella concluded that he must have been a cougar. The resemblance was particularly strong when she laid back her ears to attack.

When she ate the resemblance was more to a horse. Eating and chewing, she seemed prepared to devour everything in sight. Dishes of milk and bowls of cat food merely stimulated her appetite. Hands and arms were canapes, visitors were hors d'oeuvres, typewriter erasers, sofa cushions and books main courses. Rugs were suitable for dessert. Anything in the house might qualify for a post-prandial claw sharpening.

She was three months old when Ted Zinck dropped by on vacation. Ted and Jim had roomed together at college, then gone their separate ways. Now Ted was a Ph.D. working with rockets and missiles in Florida.

The house was by then a shambles, shredded upholstery hanging crazily from the furniture, drapes in tatters, cat-marks everywhere. The faint odor of cat droppings hung over all, for Sumi refused to be house-broken.

"Some cat," Ted said.

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"Uhh," Jim said.

"You're not too enthusiastic."

"Uh-uh," Jim said.

"Then why don't you get rid of her?"

"Not enough nerve to drown her, not anti-social enough to give her away. What can you do with a cat?"

"Mroaw," said Sumi, biting the hand that fed her.

"Give her to me," Ted said. "I'll rocket her off to Mars."

"You'll what?"

"We need a cat to send off in a rocket that's supposed to circle Mars and then come back. It'll make Sumi famous."

"Would it hurt her?" Stella asked.

"It might kill her, but I doubt if it would hurt her."

"But would Sumi be the right cat?" Jim asked.

"I imagine she'd do. She's young and healthy. She's Siamese, and they're supposed to be among the smartest cats. Yes, she'd probably do fine. And even if she doesn't qualify, she'll be in Florida and that's too far to be shipped back. Your problem will be solved."

"Mroaw," said Sumi, shredding the last unshredded drape.

She went.

In Florida they tested and petted her, and withdrew their hands with vivid red marks. The man from the S.P.C.A. came to demand that she be well treated, and went away nursing the tooth-marked soft place between thumb and forefinger.

They fitted her with a special harness, taught her how to procure milk and cat food, designed testing devices by the score. Then they put her in the rocket, hooked her up, and retreated to the bunkers for blast-off.

"Mroaw," said Sumi, and fell asleep.

"Varooooom!" went the rocket.

"Mrooaaaw!" said Sumi.

She was the interplanetary cat, and the eyes of the world were upon her. Jim and Stella Warren and millions of others watched her through a direct television hookup.

They saw her chew through her harness. They saw her sharpen her claws on the rocket's bulkhead and proceed to shred everything in sight, including the camera lens. Then their screens went black.

She was the interplanetary cat, and she rode in style where no cat had ever ridden. She was in free fall, and she learned to swim through air. She chewed her way forward and she chewed her way aft. She chewed plastic, cloth, printed circuits and solid rocket propulsion fuel. She chewed a thick, multi-colored cable.

"Wham," went the cable, sparking red and white and yellow, and Sumi found herself across the rocket in a heap. She attacked again.

"Wham," went the cable.

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Thousands of volts flashed through her body. She licked her chops and fell asleep. The rocket soared on, windowless in the great beyond of all catdom.

She awoke and attacked the cable again and again until finally it gave up making bright sparks and lay dead. Then she went back to eating solid rocket fuel.

The rocket neared Mars. On Earth they pressed buttons to fire the rockets that would correct the trajectory and bring the rocket on around Mars and back.

Nothing happened.

The rocket was an empty shell, plunging down toward red Mars.

"Mroaw," said Sumi, licking her chops.

"Splaaaat!" went the rocket.

Blackness.

She awoke and it was hard to breathe and she felt strange. Everything was red, like pale cat food.

"Mroaw," said Sumi.

There were mountains, looking near in the thin atmosphere that hurt her lungs. She leaped at them, high in the air. She traveled through the air great distances, but the mountains retreated. She rolled in the red dust and then tasted of it.

"Mroaw," she said. "Prrrr."

The rocket stood on its nose, all shattered and uneatable. Sumi gamboled through plains and up mountains. The world felt strange around her, but no less eatable. She chewed and swallowed. She was a kitten where no kitten had ever been, and she could eat anything, hot electric sparks, solid rocket fuel, red dust of Mars. There were no people here to slap her behind or muzzle. Also no people to open cans of cat food or pour milk. She was thirsty. She drank from a sluggish stream. She was hungry. She chewed and chewed on a mountain.

The sun came and went a vast number of times and there were no moving things to mroaw at. The mountains weren't as large any more as they used to be. She visited the rocket and found it sadly shrunken. It was an empty husk, about shoulder high. She looked in, but could not squeeze through the gaps in the shattered hull. She could get only a single paw in.

The air was cold, but her fur grew luxuriously. The sun came and went, but in the dark time there were no mice or birds to stalk. Only red mountains to chew on and shallow rivers to drink dry. She scratched her belly on mountain tops now, and rolled on her side to scratch behind her ears. The mountains got smaller every day.

Walking was funny. She would leap into the air and the red world would recede beneath her. The claw-torn mountains and plains fell away from her, then returned to her paws. She fell, and the world bounced and shook.

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She dreamed kitten dreams of cups of warm milk and cans of brown cat food, but awoke to red ground, edible but unsatisfactory. She felt dizzy, and fell to the ground, but when her muzzle was near the ground she revived. She chewed and ate and chewed.

She could see bright things in the sky. Two of them were nearer than the others. They sped across the sky. She jumped to catch them, but they eluded her. She fell back to the red-all-over ground and it shook beneath her and great cracks opened up. She went back to look for the rocket, but could not find it, until she felt a stab in her paw, and looking down, found a silver needle imbedded there. She bit it out savagely and gulped it down.

The world was all dizzy. It was moving and she could feel it twist and turn. She saw the things float across the sky again, and leaped, and this time she caught one, high in the empty air. It tasted sharp and jagged. Then there was the problem of falling back down. The ground evaded her. She clawed for it and swam toward it. She gulped for breath, but there was only a thin sharpness. She stopped trying and found that it did not matter, she could do without breathing. But it made her hungry. When she finally fell to ground again, or it to her, she clawed and ate and clawed and then fell asleep.

She awoke and ate and stalked all over the red world. It was growing so small. In four bounds she came to the cold end of it where there was snow and ice. She chewed up the snow and then there was only a wet place on the ground. She curled up to sleep where a chewed-up mountain range had been.

When she awoke her tail was cold. She chased it and found the cold ice and snow place was on her tail. The red ball was hard to stay on top of now. It kept shifting.

She ate and slept and ate and slept, and every time the cold place appeared somewhere on her body, sometimes on her tail and sometimes on a leg. Never on her face, turned toward the sun to catch its fleeting warmth. Why was the sun so cold? She wanted it to be warm. She remembered the heater at the house with people and cups of milk and dishes of brown cat food. It had been warm. She had curled up there and slept comfortably and the ice had never formed on her tail. Would she never see milk and cat food and warmth again? She was dissatisfied with red-colored food.

She swam up and caught the other thing that floated in the sky. It was as large as she, and took time to eat. Then she could not manage to get back to the red ball. She swam toward it, but it floated off around her. The kitten in her drove her to chase it, but

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finally she became bored. It was only a ball, littler than she was now, all tooth- and claw-marked.

She slept. When she awoke the red ball was circling lazily around her belly. She stuck out a paw and hooked it. She pulled it to her and chewed on it for a while and then let it go. It plopped down on her stomach and she let it rest there.

She considered the universe. There was only the red ball, cradled against her stomach. Out beyond there were uncountable points of light, and in the distance the sun.

She ate the red ball, licking her chops, and there were only crumbs lying on her fur. She slept, and then ate the crumbs.

There was nothing to eat and her stomach growled ominously. Also it was cold.

She stretched toward the bright sun. It was faintly warm on her muzzle. She wanted to cuddle against it. She reached out a tentative paw, but it was beyond reach.

Sumi the interplanetary cat began to swim toward the sun. Her stomach growled angrily and there was only an occasional little black piece of food that floated within reach. Her stomach was not appeased.

She swam toward the warm sun.

And then she saw a thing. It did not look good to eat, for it was all the wrong colors, but she did not care. She remembered eating white milk and brown cat food, and she had eaten a red thing too. Color didn't matter. She swam toward the new thing. It might be delicious.

On Earth, Jim and Stella's great-grandchildren and the other television viewers stared at the vast furriness of Sumi, the interplanetary cat, swimming hungrily toward them from where Mars once had been.

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The following comes from a collection of ten George P. Elliott short stories, titled AMONG THE DANGS *(Holt, Rinehart and Winston). Seven of these stories also appeared in either the O. Henry or Martha Foley annual collections of best short stories—a fair indication of Mr. Elliott's excellence.*

FAQ'

by George P. Elliott

DURING THE WAR MY GEOGRAPHER was a lieutenant in the Air Corps. On one of his trips to North Africa his plane flew over the lower edge of the Atlas Mountains, where they meet the Sahara. For long stretches the range was a desolation, as he had expected, relieved only by a few ribbons of green. No doubt rivers from melting snows came down these valleys and squandered themselves in the desert, supplying just enough water to keep a strip of trees and grasses alive on their banks. All this was what he had learned in his studies. But he had also been taught that no one lived on the south side of the mountains, and yet he was quite certain that in one of the valleys he had seen a cluster of huts and some smoke weaving up through the trees. The smoke could have been mist—though it was a hot clear day—but the huts were certainly human dwellings. His curiosity was aroused. He resolved to satisfy it as soon as he was able.

After the war, when he was able to investigate, he discovered only two references to anything that could possibly be identified as his special valley. The first was in a book written in 1837 by one Benjamin Huntley, *Exploring the Atlas Mountains*. Huntley mentions hearing of the existence of a village somewhere south of Mount Tizi, but he says he doubts if his informants were reliable. The other reference was in a twelfth-century Arabic manuscript now in the Royal Library in Madrid, a report on revenues from slave trading in Spain and Northwest Afri-

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ca. On a map in this manuscript a spot considerably south and west of Mount Tizi is identified as Faq'. There is nothing in the text to explain Faq'; there was nothing but the word itself on the old parchment map. There was nothing else at all anywhere. What was he to do?

If he sought the assistance of one of the learned societies, he would certainly lose much or all of the credit for the discovery—if discovery there was to be. But the expenses would probably come to more than his purse could bear, unless he risked making the explorations quite alone and with no further reconnaissance by air. And it was a risk—the region was a true wilderness, mountainous, arid, huge, and inhospitable even to plants. But he was young and a good mountaineer and he could speak Arabic, and for years he had been risking his life for a lesser cause—to him—than this. His is the sort that wants every place to be given its right name; for him the words terra incognita signify an admission of defeat or a region of impenetrable cold; error is his evil. It was clear what he must do: discover Faq'.

I will not tell you much about the adventures he had before he reached his goal, the delays caused by the suspicion and incredulity of small officials, the hostility of the hill people, the grandeur of that wilderness in which he wandered for weeks not even sure of the existence of his goal, the privation and fatigue and load of bad doubt which only his pride could support, the great good fortune by which he was saved from starvation by a wounded eagle dropping from the skies near to him—too weak to kill it outright, he had to suck its blood. But finally he stood at the brink of a fertile valley, a valley flat and broad for these mountains, but inaccessible from above because of the sheer rise of the range and from the sides because of the steep cliffs and, as he found, uninviting from below because it narrowed to a gorge that emptied the river out precipitously; but people lived here—it was Faq'. It took him three days to discover the tortuous route of access into the valley, and one whole day to get to the floor. Among rushes at the edge of the river he collapsed, one hand trailing in the water, flat on his belly, sunk at last into that weariness which his pride no longer needed to deny. He lay there for at least one day and perhaps two, he had no way of knowing. When he awoke he could scarcely roll over, and the hand which had fallen into the water was wrinkled white and seemed to be paralyzed. It was lucky for him that he was not discovered, for the women of Faq' would have killed him if they had found him asleep.

He finally rolled onto his back,

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and lay wondering whether he would ever be able to get up. But as he lay there in the soft rushes in the warmth of afternoon he began to notice, as though for the first time, that vast clean sky under which he had so long labored; and in his fatigue he could not resist the sudden fancy that the sky was not *over* him—he was not *below* its perfection, but rather he was a part of it. "For is not the blueness of the sky," he said to himself, "achieved only by the refraction of light on innumerable particles, which are about me here as well as out there, and maybe in me for all I know?" The longer he lay, looking not up but out, into, among, the more it seemed to him that the sky was not so absolute a blue as it had been on the days before. Yet there could be no mist, not here on this side of these mountains. He lay wondering whether so much blandness had deceived his senses, but he was swimming in that perfection all the same; and then suddenly an explanation for the seeming mistiness occurred to him. It was a light smoke haze. He remembered the curls of smoke he had seen from the airplane, and he observed that there was no wind. No doubt a nearly imperceptible film of of smoke obscured his perfect vision. This saddened him for a moment, but then he thought, "Why is it not as absolute a perfection, the sky with this faint and even haze in it, as a clean sky? These smoke particles had been added, but thinly like the blue particles, perfectly distributed. They are not an adulteration, but a version of that other perfection, a part of it, distributed differently now than before; if it hadn't been for that tiny difference I would never have noticed the whole, huge sublimity, and who can say that one of these versions is truer than the other?" Full of these reflections he arose and went down the riverside in search of friends.

He had not gone far when he heard children's laughter in the woods across the river. The stream was neither very wide nor fast-flowing, and at its deepest it did not come over his chest; yet he thought he would never get across it alive. When he was ten yards from the opposite shore he fell in exhaustion into the stream, and floated on the current more dead than alive. But he was caught in an eddy where he lay with his nose and eyes just sticking above water, slowly revolving under the green shade of an hospitable tree like a log in the pool. All he had to do to save himself was to crawl up under the tree onto a pleasant bank. But it didn't seem worth the trouble. It was too lovely there to move, looking up into the twining imperfections of this tree, cool and still and spread out and wet, slowly going about in the eddy, finally without will, only a thing that

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once had been able to think and now was at peace in the enveloping water, in one complete embrace happy. He does not yet understand why he ever climbed out of the water. He was not conscious of making a decision. All of a sudden it came to him that the sun had gone down and it was time to come home; before he could reflect on this odd notion (where was home?) he found himself climbing out on the bank, a live man again. Never since then has he felt anything out of the ordinary about floating in a river or looking at the sky, and he doesn't know exactly how to explain the experiences of that day—his fatigue perhaps, or the special air and water there, or his relief at finding his goal. What he is sure of is this: while he didn't know what to expect from the people of Faq', he was prepared for it when it came.

It was dusk when he approached the huts. They were long and thin, and all of them pointed up the valley toward the mountains. There were no windows in them. They were interspersed among trees. At some distance he could see a large hut in which there were fire, cooking, noise, children. He crept up to the closest hut, and crouched on the dark side of it listening to the mutter coming from within. The muttering was fast and monotonous, in a man's voice. It seemed to be a praying in some Arabic dialect. He could make out some of the words, or thought he could; they seemed to be numerals. As he listened to that unflagging drone it occurred to him that this must be a machine, no man could do it; but then he heard a clearing of the throat and a slight pause, and he realized it was a man all right, but a man imitating a machine. A praying machine. He thought of hermits.

Footsteps approached. He glued himself to the wall. He heard a woman murmuring, a slight altercation, a moment of laughter, stirring sounds, and then footsteps going away. He looked carefully around the edge of the building and saw a well-built young man, not an old one as he had expected, and a young woman. Side by side they were approaching the building of light and noise. Others were coming to it also. There were no dogs around; at least none had smelled him out, none were barking. He crept nearer the communal house. The odor of cooking food nearly made him faint it was so pleasant. Nevertheless, he lay low a while, trying to understand what was going on. Everything about the scene appeared to be unexceptional and happy. There were several men and many more women and a good many children. Three old women came out into the darkness and on the way to their hut began singing quietly a song the like of which he had never heard.

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He saw a young man catch and embrace a struggling young woman at the door to the hut, to the general merriment, all with an openness which he had never so much as heard of among Mohammedans. He had no idea what would be best for him to do.

What he finally did was to walk straight toward the doorway crying as loud as he could, which was not very loud, "Food in the name of Allah!"

Well, they took care of him, fed him, and nursed him back to strength again. He learned later that he was the only outsider who had ever been allowed to live in Faq'—to stay alive, I mean, not just abide there. I think it was more than a matter of whim that he was allowed to stay. He was completely at their mercy and they could understand something of what he said, so much was in his favor; but mostly he helped himself with his own honest pride.

After he had eaten some of the vegetable stew which is their chief food, watched intently by a hundred dark, silent faces, the chief, Alfaleen, asked him in their dialect who he was. Now my geographer had noticed that no one had mentioned Allah and that the chief's style was very plain for Arabic, with none of those honorific courtesies universal among Mohammedans. He had noticed this, but hadn't known what to make of it. He answered, "Destroyer of boundaries." There was no response. Either they had not understood his accent or else they were not at all impressed. "Foe of all ignorance," he said. No response. "Seeker of truth."

Then Alfaleen said to him, "What must be?"

"What has always been will always be."

"What must be?"

"So long as there are hills the rain will flow down them in streams."

Alfaleen repeated, "What must be?"

"Each number will always have two neighbors."

But Alfaleen asked again, "What must be?"

And this time he gave the answer he would never before in his life have given: "Nothing." It saved him.

He has wondered a thousand times why he gave that unlikely answer. He had of course heard of the indeterminacy principle; he had heard, with fascination, that law is a matter of statistical probability and that truth is finally a matter of whichever of the many geometries best suits your needs. But since he had never been able to imagine such things he had not believed in them, and he certainly had never asked himself whether or not a stone *must* fall, two plus two *must* equal four. Yet had said to Alfaleen, that black, cool, impersonal man, that nothing must

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be. He attributes this answer of his to the power of Alfaleen's mind. He was concentrating hard on understanding what was being said to him and on choosing the correct Arabic words for his answers, he was weak with fatigue, he sensed that much depended upon his answer, and he was alerted by the very strangeness of the question. Even so, he thinks it was the power of that other mind which put the answer into his mouth. He learned to respect that power.

For a week he convalesced. The women and children, among whom he stayed, treated him with all the friendliness in the world. Alfaleen had commanded him to tell them nothing about the place from which he had come, and had also commanded them not to ask him about it. He had nothing to do but to lie about listening to them, learning what their customs were and how they thought and what they were afraid of—not learning it so much as taking it in like the food and water and bright air. He observed that none of the mature men did any of the ordinary tasks, like gathering fuel, fishing, repairing the huts, irrigating the fields; they seemed to have some other work. The women did not resent this state of affairs; it had not occurred to them, apparently, that things could be otherwise arranged. The children were amazingly unrestricted and happy. There were at least twice as many girls as boys for some reason, but the women did not seem to treat the boys with any great reverence. The children were not allowed to go near the huts at the other end of the village (where he had heard the man praying like a machine). Every morning Alfaleen would take the boys over five off to school. The girls learned from the women. Boys were punished for being too rough, too "manly"; girls were punished for using a number over one hundred. The children had a game which they loved to play, with innumerable variations: a boy would sit in a special position and begin to count in a low regular voice, and a girl or perhaps two or three of them would try to distract him. They would use every means imaginable except hurting: shout in his ear, caress him, throw cold water on him, count backwards in his same rhythm, put food in his mouth. Some of the boys had developed amazing powers of concentration, but the wiles of the girls were irresistible. No boy could hold out for more than a quarter of an hour—but no ordinary boy would have held out against those girls for two minutes, whatever he was doing. One little girl, about eight or nine, who was particularly attached to him—a quiet thing with a clumsy, strong body, rather deliberate, rather grave—told him one morning that she had had a nightmare about the end of the world. She had dreamed, she said,

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that "they came to the end of the counting and I was one of the ones left over." A little boy who got angry with him once called him a "slow counter." From the awed silence and snickers with which the other children greeted this, he concluded that it was a serious insult. The women and children were the happiest he had ever seen; yet there was nothing intense about what they did. They seemed never to have suffered. He was too feeble, too contented to feel any strangeness about all this; while it lasted it seemed exactly the way things should be. But when he was strong again at the end of a week and Alfaleen removed him from his idyl he was glad it was over.

At first Alfaleen asked him questions about the world from which he had come. "Which men are most revered? Which have the greatest power? For what is a man put to death? What is God nowadays?" But the questioning did not go on for long. Alfaleen was feeling him out, determining just how to introduce him to the life which he was entering. To one who lives with beauty hourly, as to a man in love, the various semblances of beauty to which he may be exposed are all imperfect and not in the least interesting; he wants to be with the true beauty. Alfaleen's was the beauty of truth, and he wanted to share it. He tried tricks and deceptions in his questionings, but he was hopelessly honest; it was clear that no one had lied in Faq' for a long time.

Well, the upshot of it all was that he was deemed worthy to become a bearer of the mystery of the truth, a participant in it. He was taken to a hut of his own in the men's section of the village—a bare, dark, quiet hut—and there taught to count. One sat in a certain manner—the way the boys had sat in their game—weaved in a certain rhythm, closed one's senses to the outside world, thought only of the perfection of one's technique, and counted in a steady voice. He was given a block of numbers very high in the series, told certain permissible abbreviations and short cuts, and left each morning to his counting. Alfaleen instructed him each afternoon in the history and aims of Faq'. He understood it all in a way. He was quite good at counting. But then he had to be; anyone who fell below a certain monthly quota was put to death. So was any cheater. Alfaleen would prowl about outside the huts listening to the voices of the counters—two or three times a day he came by, so keen and trained that he could tell by the very cadences of the murmuring count whether the counter was in danger of falling behind. There were no cheaters.

In the tenth century, when the Arabs were conquerors of North Africa and Spain and were also developing advanced mathematical

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theories, a nobleman-mathematician named Alfaleen stopped in the province of Maraq' while en route to Spain to enter the faculty of the new college of mathematics. But he fell out with the theologians of Maraq' and was condemned for his heresy. Alfaleen had maintained that pure reason, and only pure reason, could ever achieve the truth, and that since thought was the greatest power in the universe then Allah must be thought. According to the theologians this was as much as to say that the Koran wasn't worth a couple of quadratic equations and that if God is idea then idea is God. To rescue the youth of Spain from such notions they recommended to the governor of Maraq' that he execute Alfaleen. But the governor was an old friend of Alfaleen's father; instead of executing him, he had him and all his party driven off into the granite wilderness to perish for heresy. And that would have been that; but by some hook or crook they fell in with a band of native blacks, founded Faq', and established a colony. Their descendants have lived there in peace ever since. They had no animals or tools, but none were needed. The outside world forgot they were there, and any stranger who happened to come to Faq' was put to death.

So far as their traditions tell, the constitution of Faq' has remained unaltered since its founding—the laws of reason are ageless. There is Alfaleen, the chief, the philosopher, the king; there are the men, who count; and there are the women, who do the work and tend to the men. The original Alfaleen, to whose genius Faq' owes its peace and its purpose, had by the exercise of pure reason seen the folly of racial distinctions; blacks and Arabs had intermingled as they desired, the third Alfaleen was himself pure black, and by now the blend of races is complete. He had seen the problem of keeping down the population; defectives, women who can no longer work, innovators, are all put to death. The ratio of women to men had been kept fairly constant at three to one. Though the women, having no souls, cannot be entrusted with the high mission of Faq', yet the actual survival of the colony has come more and more to rest upon them—they weed out the unfit, they maintain everyone physically, and they keep watch on the men. Indeed, though Alfaleen is the governor, it is the women who actually make and execute all the rules and customs—except, of course, those having to do with the only thing that matters, the exercise of pure reason, the counting.

For Alfaleen has set his people reason's purest problem: number. And each Alfaleen, chosen solely for his ability, spends his life in the contemplation of number and the attributes of number in the

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confidence that the penetration of this mystery, the final conquering of it, will lay bare the secret to all power. But not many men are capable of such true and ultimate endeavor; hence, as soon as the colony had stabilized itself, Alfaleen, like a good philosopher-king, had set his subjects to the accomplishment of a communal task, one which in its very nature surpasses any other that men have set themselves: counting. By hypothesis the highest nameable number is as far from the end as one is, and there is no end to counting. It is the function of Faq' to test this hypothesis in the only statistically verifiable fashion, actually by counting forever.

The women may not use a number greater than one hundred; the life of Faq' does not make larger numbers necessary and woman's reason would sully truth. Originally there was much defection from the strict regime, and at one time had the insurrectionists banded together they could have overthrown the rule of this godless theocracy, but Alfaleen won out. They have reached a very high number; they expect in our lifetime to reach the number beyond which numbers have no name. Into that darkness Alfaleen will shed the light of reason.

More and more in the past few centuries Alfaleen has come to believe that the core of the problem of number lies in its oneness-endlessness and that the original impulse which set the men of Faq' to telling the rosary of reason's mystery was by no means an expedient but rather an attempt to mechanize the mystery itself. For this, says Alfaleen, is not only the activity of reason, it is reason pure, this counting, because only incidentally does it correspond to anything outside man's mind. It becomes clearer and clearer that without this endless and exact demonstration of reason's truth all reason would be subverted and mankind go back to what it had been before.

Alfaleen said, and certainly he believes it, that there is a sense in which man's destiny hangs upon those counters in Faq', for that they do not reach the end of counting is the demonstration of all hypothesis. If they should reach the end, reason would have done what is impossible to it and the rest would be chess, for then they would have proved that reason too has its law—absolute positive correlation. But if they should quit counting—weary, exhausted, rebellious, defeated—then would you and I have succumbed at last to our weariness and rebellion and defeat, and the women would take over.

At first he was exhilarated by the novelty of the life and what seemed to be the importance of the counting. At the outset boredom was the dread at the back of

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his mind, but in fact he was never bored. The counting seemed to hypnotize him into a state of strange tranquility. He was tranced, as it were, into reason's realm. So much so, indeed, that it was not many weeks before he quite lost interest in exercise and food and the evening conviviality. Then girls taunted and seduced him, with an innocent artfuless and a voluptuous naïveté which he found (as had the boys in the game) irresistible. One night he counted in his sleep, and all the next day he was required to play with children and make love to young women and lie in the sun. Everything was communal in Faq', property and love as well as the great task. It was a world of reason and sense and trance, and he found it far happier than the world of mystery and strong feeling from which he had come. But eventually he began to think.

Or perhaps not to think so much as to remember. He remembered the anxiety and injustice and despair and the huge splendors of this world—the poverty, the right and wrong, the power, the pain. Especially the pain. He told himself again and again that ten thousand sink that one may rise, that whole cities stink in ugliness that fifty men may make and enjoy only a little beauty. But not all the reasonableness he could muster, nor horror at his memories, nor the truth and high pleasantness of Faq' could drive the thought of pain from his mind. For it was pain, suffering, moral agony, that his memories revolved about. It became clearer and clearer to him that he could not live without pain, not even thus happily, not even thus participating in the great task of man's noblest faculty. He tried hurting himself physically; he had a large rock balanced precariously once, ready to roll onto his arm and smash it. But the absurdity of such an act here in this equable valley stopped him from doing it. And afterwards the indignity he felt at not having been able to prepare a pain for himself than this which any accident might provide, not having been able to go through with even this little thing made him resolve to leave Faq' as soon as he could. For a long time he had been dissembling at his counting, with great anxiety and guiltiness. Now that he had resolved to leave, it suddenly seemed silly to him, and he dissembled without a qualm.

He sat day after day in his hut making the sounds of counting, and often actually tranced into it—it had its own power. But most of the time he was planning his escape. It was necessarily an escape too, for anyone guilty of any defection, from bad health to rebelliousness, was without mercy or remorse killed. He collected food and water and made himself a substitute for shoes. He walked on

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rocky ground till his feet were horny. He played and swam very hard till he was strong and supple. He had no human ties to break; four of the women were pregnant at the time, one perhaps with his child, perhaps all four, perhaps none, he did not care. He would miss Alfaleen's cold, pure speculations, but never, he knew, so much as he now missed the pain of this world of ours. He lay in the sun till he was nearly as black as they, and in the middle of one stormy night he left. He was not pursued.

He returned to us after much difficulty. He is suffering with us now, and looking back at the bland perfection of Faq' with a sometimes acute nostalgia. But my geographer is determined never to go there again, for he is sure that though he does not know what is right for men ordered perfection is wrong, and that though suffering is bad the lack of suffering is much worse.

Through Time And Space With Ferdinand Feghoot: XLV

It was Ferdinand Feghoot who, in 3234-zz-1877, saved the American Indian from cultural extinction. The learned Texarkana Uetbacq, Doctorette of Trans-temporal Sociology and Chairman of the Society for the Aesthetic Rearrangement of History, had decided that they must be totally integrated with the 19th Century post-Potato-Famine immigrant Irish. "They are culturally sterile," she flatly declared. "No Indian ever invented anything."

At once, Feghoot challenged her to go back to 1877, and at once she accepted. On the Sioux Reservation, he escorted her to the teepee of the great Sitting Bull, who sat with vast dignity behind a fire of buffalo chips. His coup-sticks—bearing his scalps and other trophies of war—were fastened to a skin stretched overhead, something never previously seen.

"Ugh!" he announced. "Squaw look. Me great strategist. Me fix damfool Custer heap good. Huh—also fix Seventh Cavalry."

His visitor merely bristled.

"Ugh!" the old warrior went on, winking at Feghoot. "Also me great inventor. Me make heap good gadget first time."

"Rubbish!" sneered Miss Uetbacq. "You'll have to *show* me!"

"Ugh!" Said Ferdinand Feghoot, pointing up at the trophies. "Squaw look—acoustical ceiling."

—GRENDEL BRIARTON (*with thanks to Joe Olson*)

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What Emmeline wanted was her husband to show up on time for tepid manhattans; what her husband wanted was to step into a field of entropy. Of such minor differences are many domestic quarrels constituted.

GREEN SUNRISE

by Doris Pitkin Buck

"DARLING." FOR A MOMENT Emmeline's voice held the softness of honeymoon days as it drifted to the basement where Al was working. He raised his head, ready to smile; equally ready, though, to go back into his shell if memories of his wife's wrongs came over her again. Evidently they did, for he heard them as in a different tone she called, "Oh, come on, come on. Let's get in step, for once."

Deliberately, Al placed three more transistors in his Time Machine. He would continue working on it until he sensed that Emmeline was really ready to explode. Then he would go upstairs where they would both pretend they were terrifically in step. Or in love. Call it anything you want.

Some day the Time Machine would be complete. Then Emmeline could call, dovesoft or shrewish. But he would be on his way to another lass and probably a very different drink. He would see the glorious machines of the half-imagined future. And he hoped Emmeline would be missing him terribly.

His mind slid back, in an insidious way it had, to their first explosion in a chain reaction of quarrels:

The Mill was big and beautiful, even before remodelling. It called aloud, every separate stone of it, for an inventor to fill it with his embodied fancies. The woods feathered off softly into saplings. When he wasn't busy with mathematics and mechanics, he planned to paint. He stood looking at his new property—his and Emmeline's of course—so absorbed that at first he did not realize he was listening to something worse than chickens—to the stridency from a peacock's throat.

"What do you think this is—a damned English castle?" He was furious. He suspected he would have to feed that peacock when he

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wanted to work. And how could anyone think through all that raucous hysteria?

"But you must love her, darling. She's the first. Later when her eggs hatch . . ."

"Her eggs . . . !" She wasn't even a cock.

They had hatched—and he hated every single peachick, if that was the term. He loathed them, all the more because visitors thought them cute. Invariably.

He was ready to swear that he never meant to gloat openly when they died from an obscure bacillus. But the shattered world had never been the same again. Emmeline had acquired a grievance. And new little grievances hatched out—his and hers—like the chicks.

He adjusted a wire in the Time Machine and became realistic. His adored Machine—he had to face it—wouldn't work. The power of thought was involved as well as the formulae of advanced physics, and somehow the mental part was not yet right. His formulation of the mathematics of utter physical lack of organization—entropy to the scientists—satisfied him. But—

While he settled at his desk, he thought he had better pacify Emmeline, and he stalled for time before they met to sip the cocktails which were gradually no doubt growing tepid. "Coming, angel," he called with apparent blitheness. He settled comfortably at his desk and began to work out the mathematics of his personal contribution to propulsive force. He could let *psi* stand for the power of his mind. Tentatively he wrote, letting T equal Time: The integral of *psi* differential T equals the chronodynamic impulse of thought. That about summed it up. He touched the Machine tenderly.

Al waited for the heel-tapping that was almost a stamp. When it came, he went his reluctant way to the living room.

Emmeline, with an untasted cocktail in her hand, shot at him suddenly, "If you want to leave me, why don't you get into your—your Contraption and go?"

Al changed the subject instantly. He snorted, "Contraption! What do you know about transfers of energy between isoenergetic spirals, or for that matter about changing their frames of reference?"

Emmeline gave her husband an alert, receptive look that invited interchange of thoughts. He fell into the trap. He always did. He began to talk on his hobby. Just when he thought he was communicating fully on the subject of induced entropy, and how an entropic field could slither, as it were, through less random sections of a universe whose fourth dimension is time, he noted the faraway look in Emmeline's eye.

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For some reason he also noted that the hands of the clock stood at 6:45.

The hour seemed unimportant to him as he spoke with bitterness. "It's nothing to you that the very nature of entropy makes it all but impossible to bound it. Therefore my Machine, which you unjustly call a contraption, cannot—"

"Cannot work," Emmeline finished for him, unable to keep a shade of smugness out of her tone. She added, "Don't you see it needs—"

"Needs what?"

"Call it woman's magic for short. Science always requires magic to complete it."

Al laughed. Any smugness was now on his side.

"Don't! Did I laugh at your theory?" That made him pay attention. "Think of what I do with time. Since my late teens I've turned it backward and forward, mostly forward at first. Now I always turn it back."

Al looked his bewilderment. What Emmeline said almost sounded as if it made sense, though of course it didn't.

She left the room to return with a hatbox. Opening it, she drew out something that looked like a wreath of moonflowers. "See, Al, magic! I put it on like this, and seven years are gone. Vanished. Look, we haven't yet seen the Mill where you—" She added, almost too quickly. "I tip it this way; more years disappear." Emmeline spun it on her finger. "Funny, I never thought of calling it magic till today. Why, I could put my magic ring of flowers around your —what did you call it?—your induced entropy and let you do anything you want with time. But why leave the present?"

He looked her full in the eyes. "You're really asking?"

She looked steadily back. "You mean, my only love, that we're quite, quite washed up?" She waited—a full minute. Al could have denied it.

Then in a flash her violet eyes became pure flame. "There's one way to find out," she cried. She almost hurled herself from the room.

Alfred followed his violet-eyed wife as she ran down the cellar stairs. He did not know what might be in her mind. But he had an almost maternal protectiveness toward his creation in the basement, and he feared some change for it was in Emmeline's mind.

He reached the foot of the stairs almost when she did. The Machine towered over both of them with an eerie, non-human beauty of its own. What would happen if he put his arm around Emmeline's shoulders and pointed out the racks to hold his transistors? He wondered if she saw the faint suggestion of a fortress in his walls of wire mesh. He could not tell. But he knew one thing: That he

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was going to leave his dilemma and leave it now. He wanted no deep involvement with any woman. Give him the calm of great mechanisms which he was sure would dominate coming ages with their serene perfection. He saw them already.

He sprang—he did not step—onto the platform of his Machine, pulled three levers and flicked a switch. It must go, he told himself.

Machinery whirred. Light flashed violet. But his creation stood as solidly, as stolidly in its place as Gibraltar. Emmeline, her eyes widening, moved close.

Al had no idea what she might do. Smash everything? He must go now, he thought with desperation. And thought was the last and greatest part of his elaborate scheme.

Again he pulled levers. His fingers felt for a button, forgotten in his first rattled attempt.

Light rippled out in orange lines. The ripples crested. They rose as waves. Between them space darkened like chaos and primeval night. A great hum vibrated and rose to a roar until the platform shook. A fireball of green streaked from nowhere. Struck.

There was silence. The sea of color vanished. The fireball was a memory. And the Machine had not moved an inch in space. It had not moved a second in time.

Emmeline gave a long, long stare to the man among his tubes and racks. Her tone sharpened. "I want to find out something as much as you do. This is the way. Go. I'll send you."

Her arm swept out. She threw something at the Machine. Al's arm moved to guard his darling.

Too late. Emmeline's little pale wreath slithered down the curve of a hoop and knocked a switch and two spirals as it did so. Again the Machine quivered. But this time something delicate near the circlet—another spiralled wire—was flicked to a new position. The Machine jarred. Al reached toward the three switches but only had time to pull one. Violet radiance glimmered. Eyes? No. Everything had ceased to have its usual meaning or form. The boundaries of everything flowed into everything else. For a dizzy, disturbing instant long as years, electrons whirligigged round a nucleus before their pattern collapsed. He was no longer himself. Something that might have been Al thought, "This is Entropy."

He was dead. Every physical atom that had made him was annihilated. Eternity opened like a velvet abyss. Tides of weariness and despair swept through the universe, but what felt that lack of hope, nothing could tell.

Light swirled round a weak, sick creature which felt pins and needles pricking its fingers and toes.

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"My delight," a voice cried outside this creature, "you came because of my longing. It brings me my desire. You must be a man out of past time. You could not be dressed so madly were you anything else. And this incredible—what shall I call it—" A hand crept toward the tubes and transistors.

"Let my Machine alone!" Al's voice rang out clearly. Toes and fingers, no longer tingling, belonged to him. He was suddenly frightfully happy, frightfully hungry, and quite aware that he was stepping into some wholly different century.

"Who are you?" Al presently asked the girl rubbing herself against his ankle like an immense and lovely cat turned human.

"Zopheeta, my dream-come-true." Evidently she liked men long, rangy, and red-headed. He liked her too, and was glad her speech was understandable though the vowels were less than familiar.

"I'm hungry. Also dreadfully thirsty." Al felt the lack of his barely tasted cocktail in Emmeline's living room.

"Look, lord and love. A new beverage machine. I think—I believe— Perhaps I can work it. What is your pleasure?"

"I'll take . . . what you do."

"Then we drink Formula K. One sip: troubles cease. Two sips: the past reshapes itself according to the heart's desire. Three sips and the future opens like a perfumed rose."

"Perfect. Especially sip two."

"I hope I recall the ingredients." Zopheeta's forehead wrinkled painfully while she consulted what seemed to be a bartender's manual. She did not read it. She tore out objects like IBM cards and slipped them into her apparently solid cocktail machine. On one card Al recognised a chemical symbol—the benzol ring. Other signs he did not know. Apparently the drinks of the future were concocted from scratch.

Zopheeta told Al, "I am not what any person in your century would call an intellectual. Light of my eyes, I may make a slight mistake here or there. But I think I can produce the green and bubbling liquor, Formula K, which—as it touches your lips—is like all the frosts of autumn for coolness."

Al could almost feel Formula K going pleasantly down his throat. Zopheeta seated herself near Al. Two small tables appeared; on each was a goblet with a pretty froth of jade fountaining upward. Then the drink cleared, bright and full of bubbles.

Al lifted his glass. "Here's mud in your eye."

She looked shocked. "Was that kind? I am sensitive."

For the first time in a somewhat dazed quarter hour, Al looked at

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her carefully. He could kick himself for his remark. Her eyes did not exactly match; each was turquoise blue, but one was definitely greener than the other. Zopheeta let her lids fall. Her hands, supple as Spanish fans, rested like dainty paws on Al's knee.

"You will love me, will you not? It was sloppiness for me to choose a second eye that did not match when they were operating. But I was tired. I can always buy new eyes. Then you came, just when I appear my most regrettable." The blue eye and the blue-green eye both misted. "I am not an intellectual. Always I do things like this. The higher masochism, lord. You will not hold it against me; no? I have loved your image for years, constellation of my night."

"Hold it against you? Not for a minute. I was clumsy."

She took her fingers from the stem of her glass which hung for a moment in midair. A small stand shot toward it, stopping when it was not quite underneath. The glass descended, almost toppled off, got chipped; but finally glass and stand reached adjustment. Zopheeta paid no attention. She pouted, "Why do you not embrace me, since I am not displeasing to you?"

Of course that was what he should do, Al supposed. But he just wasn't accustomed to that sort of thing. Even his dreams weren't quite that direct. He temporized. "After the drink," he said.

Zopheeta looked crestfallen but followed his lead. She reached toward the stand for her glass. Al took the first sip of his. It was slightly warm. Zopheeta sipped hers and made a face.

"I make such mistakes," she confided. "A panel of analysts have told me I am intelligent, entrancement of my existence. But I put, as it were, my fingers in my own eye. I wished to impress you. I blundered."

"What does it matter?" Definitely that first sip, even warm, did have a solvent effect on troubles. He took the second. What had Zopheeta said? The past would be rearranged, wasn't that it?

The Mill was big and beautiful. It had called aloud, every separate stone of it, for an inventor to fill it with his embodied fancies, and now Al stood surveying shapes as delicately curved as shells, yet strangely suggestive of dimensions beyond ours.

"Darling," Emmeline's voice floated out of silence, "aren't you tired, beloved? Shall I bring your brushes and paints?"

She came toward him slowly because she stopped to fondle each machine with love and awe.

Al did not take the third sip. He lingered in the pleasant past. But the effect of the drink was brief. He had a sharp reaction, remem-

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bering the peacock. This was a helluva way to time travel, with mental feet still in the twentieth century, still in the fly paper.

"Damn!" he cried out of his frustration. "Damn! Damn!" He turned on Zopheeta. "And you couldn't even serve me a cold Formula K!"

The evening was strained. Zopheeta kept looking past him, aloof as a cat at evening. Al found he had plenty of time to size up his surroundings.

Apparently he was in a house that carried indoor-outdoor integration to its ultimate limit. Forest trees rose a hundred feet or more under a translucent dome. Escalators with involved and lovely lines led to their tops.

Since Zopheeta remained impersonal, Al went up one on his own. It led to a high platform in the blossoming branches, from which a gently rolling flowerscape was visible, the high blooms facing upward into soft light. He noticed other platforms, many holding what he thought were birdcages. He went to the edge and stared through the blooms into depth on depth of green. At once a kind of airy catwalk or bridge shot out connecting the place where he stood with another. Al shrank back. Below, he heard Zopheeta laugh. He peered far down. Her uptilted face was watching him.

Al summoned all his daring and walked out over blooms swaying a light breeze above a green confusion that was part boughs, part air. He felt dizzy, but he managed to reach the next platform. He looked down. Zopheeta's face still tilted toward him. He pointedly disregarded her.

Instead he looked at the numerous cages which turned out to be full of butterflies. Their wings were sinister with markings like spider webs, like zigzag lightning, or like whirlpools. He poked a twig among them, wondering if anything savage would happen. But the airy creatures were actually peaceable enough. Still and all, ages must have passed for these insects to be so changed. He could not be sure, though. He was no biologist. He wanted to ask Zopheeta what century he was in, but he felt too stubbornly proud to apologize for his outburst over the temperature of Formula K.

He heard Zopheeta laughing silvery scorn beneath the trees and out of bravado he moved to the edge of the second platform. Again a bridge shot out, leading to a kind of Daliesque summerhouse that tipped to and fro as the branches under it moved.

With Zopheeta's laughter bubbling upward, he put his foot on the bridge, which abruptly stood on end, quivering and creaking. Al reeled back onto the platform. The bridge, made of plastic slabs and cables, went to pieces in a big

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way, with slabs falling everywhere. Luckily Al was not hit. There was a whirr. Then a voice intoned slowly, pausing between each syllable, "In case of mechanoruption, consult your servonator. This—" everything slurred a little—"is a recorment." The recorded announcement was repeated six times. Then everything whirred again.

"Clamber down the branches. The descendo-scalators are probably out of order too if the recorment stopped. It should repeat ten times."

Al saw a large squushy fruit growing near the platform and considered dropping in on Zopheeta. But he had the conditioning of a twentieth century gentleman. Instead he grabbed the large tree limb on which the platform rested, and he crept awkwardly along it. The tree was fortunately well supplied with sturdy boughs. He got down, rather scraped, a bit lightheaded, but in the main rather proud of himself. By the time he reached ground, several descalators hung limply from branches.

"Think not of this," Zopheeta spoke with an annoyance which he realized was not directed at him. "My servonator told me at the last time there would be trouble always with this. Pretty but flimsy, no? I have a standin-order— You know what this is? Yes? Well, he comes every twelfth day to get everything going again."

Al digested that. Apparently, he told himself, people here led highly mechanized lives among machines that didn't quite work. He thought with tenderness of further time travel.

With her nose still in the air, Zopheeta took two flasks from a table and poured Al a bed. He had seen something like that in an advertisement once that hinted of the wonders of the future. Here it was actuality. There must be some special skill, though, in mingling the liquids and Al feared the worst. But Zopheeta's higher masochism was in abeyance. The bed solidified properly. She watched it, then with marked disdain poured a second bed for herself.

Before Al fell asleep, his mind was on the night to follow this one. What did morality require? He had left home around 6:45, only a few hours before, by one reckoning. It really did seem like a dirty trick to two-time Emmeline in a century that he had only been able to reach because she had given up her most treasured hat. And yet, and yet—. Emmeline—dust drifting over the continent. Emmeline—a little eddy in some storm over a desert, a few motes in an upper layer of the atmosphere with snow crystallizing upon them. Or upon *her*. Al was uncertain how to put it. Perhaps all vital parts of Emmeline nourished some plant. She could be

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leaves filtering summer sun—or a brown seedpod. As lost as any transformed nymph to her demigod. Loneliness flooded over Al as he realized that he, a time traveler of one haphazard voyage, would never be likely to hit again the decade he had left. The century perhaps, but scarcely closer than that.

He sat up in the poured bed, trembling. He had never even thought of return when he set out. He had wanted a carefree temporal romp with all the rules off, and here he was obliged to make his own morality. Tense business. He looked over to Zopheeta. She slept curled up, her whole body an expression of animal innocence. Al felt his moral problems grow more urgent as his guidelines grew fewer. He was startled in what seemed a minute later to find a midday sun streaming down on him.

At midday life for Zopheeta was evidently real, life was earnest. No dawdling. No endearments. Her severely striped black and silvery grey mantle was clearly a street costume. "I go," she informed Al, "to change my eyes. Major surgery. I shall not be back before evening. Do as you will till then. My new eyes will startle you. What a color!"

"And it is—?

She brushed past him before she turned in the doorway to answer, "Oh, the new color: violet."

That remark called for a cocktail at any hour. Al circled the cocktail machine warily. To his relief he found one wall had easy-to-manipulate buttons under a label, "Archaic." In finer print he found familiar cocktails listed. He jabbed a martini button; out came a manhattan with an olive in it. Al turned away in disgust and ate some fruit that had fallen under the trees. It had a faint flavor of turpentine but was satisfactory enough.

Licking the juice from his lips, Al said aloud, "My true love," and turned toward the Time Machine. Definitely he was leaving. He hoped, however, to find out one or two things first. But when he looked at the racks of transistors, curiosity faded. He hurried over, brows knitted.

Zopheeta must have fooled around with his treasure before he was awake, or else the shock of landing was responsible. Vital parts were scattered. This could, he figured, make for complexities not in his reckoning. He set to work to get everything in perfect shape. To his relief, there was more mess than damage.

Al's absorption must have been great. He had no idea anyone was looking over his shoulder until something tickled his neck. He jumped. An unfamiliar blonde, with as many dangerous curves as

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a mountain road, was pretending to stare at the Time Machine. Her fluffy hair brushed his neck.

"A time voyager." Her voice was out of a carillon. "Zopheeta—so lucky whenever she calls across the vasts. That longing for men, what force! And this man—Ummmmmmmm."

Al turned the color of a sunset cloud, and grew even pinker when he saw another woman looking over him with eyes as coldly black as a snake's. But the snake girl attracted him, definitely, where the gogetting blonde did not. She was beautiful, too, in her cool ivory way.

"You think him yours until Zopheeta returns. Not so. He has a true understanding of machines, this one. Observe. He all but caresses each part."

The blonde said nothing. But her pout was worth a hundred protests.

"Think!" The brunette's contralto was cool as her skin tones. "They will be welcoming. Technicians are needed by Them."

"Technicians. Always technicians. Men are good for many other things. And there are never enough. One can play with them." With her own hand resting over Al's, she asked, her voice almost a purr, "You would like to be my plaything? No? Yes?"

"Suppose," the brunette was chilly, "I tell Them what you say about their rationing of men."

"Who," asked Alfred, "are They?"

Black eyes and tawny eyes crinkled with amusement. Both women laughed immoderately, joined for a moment in a shared joke. "Who are They? Why They are the Gnostocrats, of course."

"Gnostocrats?"

"The Governing Body which knows everything—or at least knows where the knowledge can be found. All knowledge is recorded somewhere in some machine's memory drum," said the blonde, close to reverence.

The brunette added, and Al could not tell whether or not she was mocking, "Nothing new has been done or invented for about a thousand years. You see, it could only duplicate what is on some memory drum."

Al stamped once like a bad-tempered little boy. A mechanical civilization—just his dish, but with everything going to pieces under its own weight. Then he could not help smiling at the irony. He decided to get away so fast that he would not even ask the brunette about the century.

Al set his foot firmly inside the elaborate wall of the machine. This trip he would do the necessary extra propelling with *psi*, the power of his thought, in spite of the blonde's crazy suggestion that he did not propel but was helplessly pulled. The idea!

Al did not take the second step.

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He *was* pulled, vigorously, not through time but through space. The blonde had fastened onto one wrist, her small nails digging into him. The brunette had him by the arm and pulled as hard. With a colossal wrench Al freed himself and made the platform, the blonde almost tumbling into the machine after him. Al punched a button. He pulled three levers madly and twisted a spiral coil. A moment more and those women would make a shambles of his complex tubes, racks, and meshes—or of him.

This takeoff was easy as a bird's gliding. Al tried to set the century dials as the Machine moved. It was too late. The stars in their courses were already hopelessly jumbled. While Aldebaran orbited round the Lyre, darkness came.

He woke again to feel a sea-wind humid on his face. The stars, not yet quite in their right positions, were paling into earliest dawn. He sensed something very wrong.

He remembered no crash but he groped to the Machine. In the dimness his fingers explored the damage as they touched piece after piece scattered on what must be a tablelike rock. The growing light did nothing to reassure him, nothing at all. His platform was a couple of cracked plastic sheets attached to one lever. A button like a sightless eye remained on a twisted tube. Wires coiled round it in a messy heap. Transistors were reduced to fragments. In this chaos, Emmeline's hat hung at a drunken angle.

The rim of the sun came up over the ocean. For a blinding instant it flashed green. Al put his hand over his eyes and kept it there a long while.

Wasn't there some superstition connected with that rarely seen flash *The man who sees—* Al could not remember any more.

He did recall the physical explanation—the wave lengths at the red end of the spectrum deflected below the horizon by atmospheric conditions; the short wave lengths at the blue-violet end diffused in upper air. That left no color but green. It was a rare phenomenon, especially at sunrise. What *was* the saying, *"The man who sees the green flash at dawn . . .* ?" Oh well, what did it matter?

He looked about him. He was on the level top of a headland above the sea—a place of grass and stones. Rocks set on end formed a rude circle. By comparison Stonehenge looked sophisticated. He must, he reasoned, be back in prehistory. Or-else he had gone far forward till he had reached a world decayed into savagery. He had no idea which it was and probably never would know. He recalled the paling stars. 10,000 years ago constella-

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tions had not looked as they did to the twentieth century. 10,000 years forward from the evening he had left Emmeline—? Al shrugged.

He sat down on the table of rock among the ruins of his—oh, call it a contraption now, he thought. Stillness and emptiness surrounded him. So much, his ego prompted, for the theory that anybody had pulled him into this particular morning of time.

He wondered idly, as winds lifted his hair, about the ultimate value of time travel if a man carried annoyances from millennium to millennium. Then he heard a song, or at least distant vocalizing For a long time it was faint.

Presently it grew louder. Singers appeared, shaggy in their clothing of pelts. Shaggy in dress, shaggy of hair, but unmistakeably female, every father's daughter of them. Equally umistakeable was an undercurrent of excitement, swelling through the sounds they made until their song became a tumult of welcome.

Al waited, with an odd, anachronistic sense of being the visiting fireman. The women began to dance around him. He got the fact that the dance definitely was put on for his benefit as figures broke from the group to pantomime before him.

Their movements were vocal as language. Al learned the recent history of the tribe; its last war, its defeat, the massacre of all its warriors, its boys, even its old men; the flight of some of the women—those he saw—from the enemy who would have enslaved them. A tall creature, her robe of skins more elaborate than anything the others wore, stepped toward Al, her braided hair falling to her hips.

Braids yet! He had not been a married man for nothing. He sensed when a woman went in for the newest style. Maybe those braids made the daring woman who sported them a leader. Something flashed on her finger. It was mica, set in dried clay.

She began to dance, as no one else had. Those who watched her, felt with her. Al stared fascinated, hypnotized. Sunlight caught on the mica. His eyes followed the brilliance helplessly while the woman danced the fury of the group. She fell to the earth, face down in supplication to her goddess. Through her, Al sensed this was a holy spot—taboo. They were not pursued here. Her thoughts turned stormily to revenge. She—and all the others—would raise up sons to kill their enemy. Al heard them crying as with one voice for their sons' father to come to them. Dramatically now the woman waved the others forward.

For a moment Al's eyes ranged over the crowd. He saw virgins, still almost children. He saw

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women, their faces avid above sagging breasts. To all of them, even the half-terrified youngsters, the expected love-making would be fulfillment. Through it their way of life could go on. Something whispered faintly that for him it would be different. But the light from the mica blazed before his eyes. He hardly knew how he felt.

The priestess—he was sure she was that—went back into the crowd. Al's eyes closed. He waited.

As though he had been commanded, he opened them at last. The woman stood before him. In one hand she held a split gourd full of liquid. Something passed from her mind to his; he knew the liquid was fermented sap and juices; knew too it was cold as a plunge in icy water, as a hidden lake in a priestess' secret cave. She could have said in words, "This is what you have sought."

Then, his head turning mechanically, he saw the girl she led forward. The edge of the girl's long mantle of hair caught the light, turning it into a mist of radiance round her supple body. Her eyes met his. They were blue as chicory, neither afraid nor overeager. They were lakes wakening to spring. With this girl everything might be different. Always.

The cold liquid touched his lips. His mouth was full of the icy drink of the last foreseeable future—and the cold jolted him back to himself. He was suddenly a man who knew his own mind. He wanted no part of this age, no matter what it supplied, even a drink that at last was properly chilled; even a bachelor's paradise of willing and unlimited women, one of them out of a poet's dream. He wanted— He put it into action not words as he drew in a long, desperate breath.

Let the priestess and her women tear him in pieces if they could. He wasn't going to end tamely. He tilted up the cracked floor pieces of his Machine; they stayed together, apparently from habit. If he could yank out the remaining metal lever, he had a weapon.

He yanked. The coiled wires zinged. They flamed. What was left of the plastic shivered. The button almost fell onto his finger. Emmeline's anachronistic hat took off by itself, possibly for another go at time. And Al passed out cold.

He came to himself in so late a twilight that he could hardly see. He was apparently in a chamber partly sunk in the earth. His back was against some sort of wall, whitish even in the gloom. It should be hair-raising, alone in a subterranean place. But somehow, as in a dream, emotions did not tally with events. Al felt happy.

Somewhere above him, he noticed a crack of light. Wondering if he would be understood, he

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looked upward and ventured a feeble "Hello."

"Darling," someone almost sobbed, and he knew the someone was Emmeline. He heard her run to the door at the head of their—why didn't he know instantly that it was familiar?—cellar stair. "Darling. Darling. I might have lost you forever, lost you in entropy."

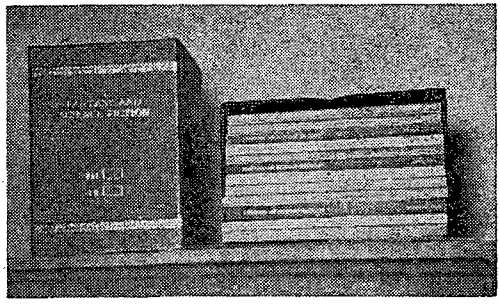
Weak as he was, Al went up the stairs three at a time. The cellar light was flashed on from above, illuminating a floor on which there was no trace of a time machine. He knew it had taken all any mechanism could. To his amazement, he found he held in his hand a wreath of white and living moonflowers.

At that instant he remembered: *The man who sees the sun flash green at sunrise knows true love from infatuation and hunger—knows it in others and even, amazingly, in himself.* The green flash was a rare phenomenon.

"For you, my only," he whispered as he placed the circlet on his wife's hair. She murmured back, "Cocktails are ready. And they're . . . they're cold as cold."

Al did not pay the least attention to the manhattans, as he and Emmeline sat close. Once Emmeline breathed, "I wanted you back so badly I knew you'd have to come." With Emmeline, that idea seemed adorable; and she was perfect. She asked no questions. The clock struck seven.

The ice in the shaker slowly melted, but that was nothing to one whose eyes had been dazzled by a green sunrise.



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This story of a family outing in the not too distant overpopulated future purports to be science fiction; there are those, we believe, who would consider it a fair report on the present. The author writes about herself: "I was born on Long Island; graduated from Radcliffe College; spent several years in Paris in an expatriate F&SF colony where all of us dropped whatever we were doing as soon as a new issue appeared. Now back in New York, I'm an editorial associate at Esquire magazine. I've written articles, but this is my first try at fiction. I have a lot more planned—as soon as somebody figures out where time goes to when it hits Manhattan." Which last might be a good story in itself . . . .

THE TUNNEL AHEAD

by Alice Glaser

THE FLOOR OF THE TOPOLINO was full of sand. There was sand in Tom's undershorts, too, and damp sand rubbing between his toes. Damn it, he thought, here they build you six-lane highways right on down to the ocean, a giant three-hundred car turntable to keep traffic moving over the beach, efficiency and organization and mechanization and cooperation and what does it get you? Sand. And inside the car, in spite of the air-conditioning, the sour smell of sun-dried salt water.

Tom's muscles ached with their familiar cramp. He ran his hands uselessly around the steering wheel, wishing he had something to do, or that there were room to stretch in the tiny car, then felt instantly ashamed of his antisocial wish. Naturally there was nothing for him to do because the drive, as on all highways, was set at "Automatic". That was the law. And although he had to sit hunched over so that his knees were drawn nearly to his chin, and the roof of the car pressed down on the back of his neck like the lid of a box, and his four kids crammed into the rear seat seemed to be breathing down his shirt

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collar—well, that was something you simply had to adjust to, and besides, the Topolino had all the five-foot wheelbase the law allowed. So there was nothing to complain about.

Besides, it hadn't been a bad day, all things considered. Five hours to cover the forty miles out to the beach, then of course a couple of hours waiting in line *at* the beach for their turn in the water. The trip home was taking a little longer: it always did. The Tunnel, too, was unpredictable. Say ten o'clock, for getting home. Pretty good time. As good a way as any of killing a leisureday, he guessed. Sometimes there seemed to be an awful lot of leisuretime to kill.

Jeannie, in the seat beside him, was staring through the windshield. Her hair, almost as fair as the kids', was pulled back into pigtails, and although she was pregnant again she didn't look very much older than she had ten years before. But she had stopped knitting, and her mind was on the Tunnel. He could always tell.

"Ouch!" Something slammed into the back of Tom's neck and he ducked forward, banging his forehead on the windshield.

"Hey!" He half-turned and clutched at the spade that four-year old Pattie was waving.

"I swimmed", she announced, blue eyes round. "I swimmed good and I din't hit nobody."

"Anybody", Tom corrected. He confiscated the spade, thinking tiredly that "swim" these days meant "tread water", all there was room to do in the crowded bathing-area.

Jeannie had turned too, and was glowing at her daughter, but Tom shook his head.

"Over and out", he said briefly. He knew a car ride was an extra strain on kids, and lord knew he saw them seldom enough, what with their school-shifts and play-shifts and his own job-shift. But his brood was going to be properly brought up. See a sign of extroversion, squelch it at the beginning, that was his theory. Save them a lot of pain later on.

Jeannie leaned forward and pressed a dashboard button. The tranquillizer drawer slid open; Jeannie selected a pink one, but by the time she had turned around Pattie had subsided with her hands folded patiently in her lap and her eyes fixed on the rear seat TV screen. Jeannie sighed and slipped the pill into Pattie's half-open mouth anyway.

The other three hadn't spoken for hours which, of course, was as it should be. Jeannie had fed them a purposely heavy lunch in the car, steakopop and a hot, steaming bowl of rehydrated algaesoup from the thermos, and they had each had an extra dose of tranquillizers for the trip. Six-year old David, who was having a particularly

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hard time learning to introvert, was watching the TV screen and breathing hard. David, his first-born son, born in the supermarket delivery booth in the year twenty-one hundred on the third of April at 8:32 in the morning. The year the population of the United States hit the billion mark. And the fifth child to arrive in that booth that morning. But his own son. The tow-headed twins, Susan and Pattie, sat upright and watched the screen with expressions of great seriousness on their faces, and the baby, two-year-old Betsy, had her fat legs stuck straight out in front of her and was obviously going to be asleep in minutes.

The car crawled forward at its allotted ten mph, just one in a ribbon of identical bright bubble cars, like candy buttons, that stretched along the New Pulaski Skyway under a setting sun. The distance between them, strictly rationed by Autodrive, never changed.

Tom felt the dull ache of tension settled behind his eyes. All of his muscles were protesting now with individual stabs of cramp. He glanced apologetically at Jeannie, who disliked sports, and switched on the dashboard TV. Third game in the World Series, and the game had already begun. Malenkovsky on red. Malenkovsky moved a checker and sat back. The cameras moved to Saito, on black. It was going to be a good game. Faster than most.

They were less than a mile from the Tunnel when the line of cars came to a halt. Tom said nothing for a minute. It might just be an accident, or even somebody, driving illegally on Manual, out of line. Another minute passed. Jeannie's hands were tense on the yellow blanket she was knitting.

It was a definite halt. Jeannie regarded the motionless lines of cars, frowning a little.

"I'm glad it's happening now. That gives us a better chance of getting through, doesn't it?"

Her question was rhetorical, and Tom felt his usual stir of irritation. Jeannie was an intelligent girl; he couldn't have loved her so much otherwise. But explaining the laws of chance to her was hopeless. The Tunnel averaged ten closings a week. All ten could happen within seconds of each other, or on the hour, or not at all on a given day. That was how things were. The closing now affected their own chance of getting through not one iota.

Jeannie said, thoughtfully, "We'll be caught sometime, Tom."

He shrugged without answering. Whatever might happen in the future, they were obviously going to be held up for a good half hour now.

David was wriggling a little, his face apologetic.

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"Can I get out, Daddy, if the Tunnel's closed? I *ache*."

Tom bit his lip. He could sympathize as well as anyone, remembering the cramped misery of the years when his own body was growing and all he wanted to do was run fast, just run headlong, anyplace. Kids. Extros, all of them. Maybe you could get away with that kind of wildness back in the Twentieth century, when there were no crowds and plenty of space, but not these days. David was just going to have to learn to sit still like everybody else.

David had begun to flex his muscles rhythmically. Passive exercise, it was called, one of the new pseudo-sports that took up no room, and it was very scientifically taught in the playshifts. Tom eyed his son enviously. Great to be in condition like that. No need to wait in line to get your ration of gym time when you could depend on yourself like that.

"Dad, no kidding, now I gotta go." David wriggled in his seat again. Well, that sounded valid. Tom looked through the windshield. The thousands of cars in sight were still motionless, so he swung the door open. Luckily there was a chemjohn a few yards away, and only a short line in front of it. David slid quickly out of the car. Tom watched him start to stretch his arms over his head, released from the low roof, then sheepishly remember decent behavior and tighten into the approved intro-walk. "He's getting tall", Tom thought, with a sudden accession of hopelessness. He had been praying that David would inherit Jeannie's height instead of his own six feet. The more area you took up the harder everything was, and it was getting worse: Tom had noticed that, already, people would sometimes stare resentfully at him in the street.

There was an Italian family in the bright blue Topolino behind his own; they too had a car full of children. Two of the boys, seeing David in front of the chemjohn, burst out and dashed into the line behind him. The father was grinning; Tom caught his eye and looked away. He remembered seeing them pass a large bottle of expensive reclaimed-water around the car, the whole family guzzling it as though water grew on trees. Extros, that whole family. Almost criminal, the way people like that were allowed to run loose and increase the discomfort of everyone else. Now the father had left the car too. He had curly black hair; he was very plump. When he saw Tom watching him he grinned broadly, waved towards the Tunnel and lifted his shoulders with a kind of humorous resignation.

Tom drummed on the wheel. The extros were lucky. You'd never catch them worrying unduly about the Tunnel. They had to get the kids out of the city, once

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in a while, like everybody else; the Tunnel was the only way in and out, so they shrugged and took it. Besides, there were so many rules and regulations now that it was hard to question them any more. You can't fight City Hall. The extros would neither dread the trip, the way Jeannie did, nor . . . Tom's fingers were rigid on the wheel. He clamped down, hard, on the thought in his mind. He had been about to say, *needed* it, the way he did.

David emerged from the chem-john and slid back into his seat. The cars had just begun to move; in a moment they had resumed their crawl.

On the left of the Skyway they were coming to the development that was already called, facetiously, "Beer Can Mountain." So far there was nothing there except the mountainous stacks of shiny bricks, the metal bricks that had once been tin cans, and would soon be constructed into another badly-needed housing development. Probably with even lower ceilings and thinner walls. Tom winced, involuntarily. Even at home, in a much older residential section, the ceilings were so low that he could never stand up without bending his head. Individual area-space was being cut down and cut down, all the time.

On the flatlands, to the right of the Skyway, stretched mile after garish mile of apartment buildings, interspersed with gasoline stations and parking lots. And beyond these flatlands were the suburbs of Long Island, cement-floored and stacked with gay-colored skyscrapers.

Here, as they approached the city, the air was raucous with the noise of transistor radios and TV sets. Privacy and quiet had disappeared everywhere, of course, but this was a lower-class unit and so noisy that the blare penetrated even the closed windows of the car. The immense apartment buildings, cement block and neon-lit, came almost to the edge of the Skyway, with ramps between them at all levels. The ramps, originally built for cars, were swarming now with people returning from their routine job-shifts or from marketing, or just carrying on the interminable business of leisuretime. They looked pretty apathetic, Tom thought. You couldn't blame them. There was so much security that none of the work anybody did was really necessary, and they knew it. Their jobs were probably even more monotonous and futile than his own. All he did, on his own job-shift, was verify figures in a ledger, then copy them into another ledger. Time-killing, like everything else. These people looked as though they didn't care, one way or the other.

But as he watched there was a quick scuffle in the crowd, a sud-

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den, brief outbreak of violence. One man's shoe had scraped the heel of the woman ahead of him; she turned and swung her shopping bag, scraping a bloody gash down his cheek. He slammed his fist at her stomach. She kicked. A man behind them rammed his way past, his face contorted. The pair separated, both muttering. Around them other knots of people were beginning to mutter. The irritation was spreading, as it seemed to do from time to time, as though nobody wanted anything so much as the chance to strike out.

Jeannie had seen the explosion too. She gasped and turned away from the window, looking quickly back at the children, who were all asleep now. Tom pulled one of her pigtails, gently.

The skyline loomed ahead of them, one vast unified glass-walled cube of Manhattan. Light rays shot from it into the sunset; the spots of foliage that were the carefully planned block gardens, one at each level of the ninety-eight floors of the Unit, glowed dark green. Tom, as he always did, blessed the foresight that had put them there. Each one of his children had been allotted his or her weekly hour on the grass and a chance to play near the tree. There was even a zoo on each level, not the kind of elaborate one they had in Washington and London and Moscow, of course, but at least it had a cat and a dog and a really large tank of goldfish. When you came down to it, luxuries like that almost made up for the crowds and the noise and tiny rooms and feeling that there was never quite enough air to breathe.

They were just outside the Tunnel. Jeannie had put her knitting down; she was looking intently ahead, but as though she were listening rather than looking. In spite of his own arguments, Tom felt his fingers thudding on the dashboard. On the TV screen, Malenkovsky triumphantly moved a king.

They had reached the Tunnel entrance. Jeannie was silent. She glanced at her watch, irrationally. Tom pressed the tranquillizer button and the drawer shot out, but Jeannie shook her head.

"I hate this, Tom. I think it's an absolutely *lousy* idea."

Her voice sounded almost savage, for Jeannie, and Tom felt a little shocked.

"It's the fairest thing", he argued. "You know it perfectly well."

Jeannie's mouth had set in a stubborn line. "I don't care. There must be another way."

"This is the only fair way", Tom said again. "We take our chances along with everybody else."

His own heart was pounding, now, and his hands felt cold. It was the feeling he always had on entering the Tunnel, and he had never decided whether it was

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dread or elation, or both. He was no longer bored. He glanced at the children on the back seat. David was watching television again and gnawing on a fingernail; the three little ones were still asleep, sitting up as they had been taught to do, hands folded properly in their laps. Three blind mice.

The Tunnel was echoing and cold. White light slipped off the white tile walls that were clean and polished and air-tight. Wind rushed past, sounding as though the car were moving faster than it actually was. The Italian family was still behind them, following at a constant speed. Huge fans were set into the Tunnel ceiling; their roar reverberated over the roar of the giant invisible air-conditioning units, over the slow wind of the moving cars.

Jeannie had put her head down on the seat back as though she were asleep. The cars stopped for an instant, started again. Tom wondered if Jeannie felt the same vivid thrill that he felt. Then he looked at the line of her mouth and saw the fear.

The Tunnel was 8500 feet long. Each car took up seven feet, bumper to bumper. Allow five feet between cars. About seven hundred cars in the tunnel, then: more than three thousand people. It would take each car about fifteen minutes to go through. Their car was halfway through now.

They were three-quarters of the way through. Automatic signal lights were flashing at them from the catwalk under the Tunnel roof. Tom's foot moved to the gas pedal before he remembered the car was set on Automatic. It was an atavistic gesture: his hands and feet wanted a job to do. His body, for a minute, wanted to control the direction of its plunge. It was the way he always felt, in the Tunnel.

They were almost through. His scalp felt as though tiny ants were running along the hairs. He moved his toes, feeling the scratch of sand on the nerves between them. He could see the far end of the Tunnel. Maybe two minutes more. A minute.

They stopped again. A car, somewhere ahead, had swerved out of line to search for the right exit. Once out of the Tunnel it was legal to switch back to Manual drive, since it was necessary to pick the right exit out of ten, and all too easy to find yourself carried to the top level of Manhattan Unit before finding a place to turn off.

Tom's hand drummed at the wheel. The maverick ahead had edged back into line. They started movement again. They picked up speed. They were out of the Tunnel.

Jeannie picked up her knitting and shook it, sharply. Then she dropped it as though it had bitten

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her fingers. A bell was clanging over their heads, not too loud, but clear. Just behind their rear bumper a gate swung smoothly into place.

Jeannie turned to look back at the space behind them where the Italian family in the bright blue car, and others, had been. There were no cars there now. She turned back, to stare whitely through the windshield.

Tom was figuring. Two minutes for the ceiling sprays to work. Then the seven hundred cars in the Tunnel would be hauled out and emptied. Ten minutes for that, say. He wondered how long it was supposed to take for the giant fans to blow the cyanide gas away.

"Depopulation without Discrimination", they called it at election time. Nobody would ever admit voting for it, but almost everybody did. Aloud, you had to rationalize: it was the fairest way to do a necessary thing. But in the unadmitted places of your mind you knew it was more than that. A gamble, the one unpredictable element in the long, dreary process of survival. A game. Russian Roulette. A game you played to win? Or, maybe, to lose? The answer didn't matter, because the Tunnel was excitement. The only excitement left.

Tom felt, suddenly, remarkably wide awake. He switched to Manual Drive and angled the round nose of the Topolino over to the Fourth Level exit.

He began to whistle between his teeth. "Beach again next weekend, sweetie, huh?"

Jeannie's eyes were on his face. Defensively, he added, "Good for all of us, get out of the city, get a little fresh air once in a while."

He nudged her and pulled a pigtail gently, with affection.

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The Kid wasn't much, maybe, but there was something about the golden horse with the sapphire-blue eyes that brought out the best in him . . . .

MUSTANG

by Randall Garrett

BEAUTIFUL? HELL YES, HE WAS beautiful!

You ever see one of them golden palominos? Beautiful, right? Well, this mustang was that golden color all over—almost a blonde, you might say.

Whadda y' mean?

The Kid? Well hell yes. There's a dozen men and more on the Turkey Track Bar who'll swear to it. He was still wet behind the ears, but we all saw him do what none o' the rest of us could do.

All right. You think the Kid is a sissy. All right, go ahead—we thought so, too, on the Turkey Track Bar. But let me tell you, that don't prove nothin'. Not one way or another.

Naw; I'll buy. Hey, Sam! Just leave the bottle here; I reckon me and Morty can pour our own. Thanks.

Anyhow, where was I? Oh, yeah.

It was the Kid who spotted the mustang in the first place. Now, I been Tad Jenkins' foreman at the Turkey Track Bar for twelve years, and I got no complaints. He pays a good wage and lets me do my job without always ridin' herd on me, like some bosses do. Tad's a tough old buzzard, and the only weak spot he's got is the way he spoils that kid of his. So when the Kid comes ridin' in after an all-day jaunt, all het up about this golden mustang he seen runnin' with the herd, I could see we were gonna have us a time of it.

Now, don't get me wrong. I like Tad Junior, and so do most of the boys, but he just ain't what you'd call a man's man, if you see what I mean. Spends most of his time readin' books, and don't give a damn for the ranchin' business.

Hell, when *I* was seventeen, I'd been workin' on my own for two years, and I joined the Marine Corps before I was eighteen, back in '42. But that don't make no never-mind.

Anyhow, the Kid comes back,

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all het up, as I said, about this here horse he seen. He come ridin' like there was a twister chasin' him, which is doin' pretty good on that horse his old man give him. She's an old bay; gentle as mother's kiss, and damn near as old as the Kid is, seems like. The Kid likes 'em gentle—he ain't exactly what you'd call a bronco buster.

He scoots up to the ranch house, hops off'n that bay, and runs inside, a-yellin' for his dad. I'd've figured there'd been an accident or something, except that the Kid's got a big happy grin on his face, so I didn't pay no more attention.

Fifteen, twenty minutes later, the Old Man comes moseyin' out toward the corral, where I was oiling some bridles.

"Frank," he says, "you been payin' any attention to them mustangs lately?"

"I got an eye on 'em," I says. "I know pretty well where they are."

He nods, easy-like. He just keeps that mustang herd because his own daddy kept horses. Once in a while, we cut out a few of 'em for the rodeo business, and when we thin out the herd, we shoot the old ones and sell the carcasses to the dogfood packers, but horseflesh ain't what it was worth twenty, thirty years ago, so it don't pay to keep any real close watch on 'em.

The Old Man says, "You didn't happen to notice a big palomino stallion runnin' with 'em, did you, Frank?"

I thought for a minute and had to allow that I hadn't. "Mostly browns, greys, and bays," I told him. "Course," I went on, "I ain't seen 'em all. I figure, long as I know about where they are and about how many we got, why, if we need any more information, we know where to get it."

"Sure, that's right, Frank," he says. "But young Tad was ridin' up near Smoky Bend, and he saw this mustang. Now, that herd ain't bred a palomino for as long as I can remember, so I figure that maybe someone's horse run away and joined up with my herd."

"A stallion?" I said, sort of questionin' like.

"Well, young Tad seemed to think so," the Old Man says. "But he didn't get too close. Likely he couldn't be too sure." Then he sort of looks off up at the sky as if he was figurin' the weather, which he wasn't. "Tad's got another idea, though. He thinks, what with all the bomb-testin' and stuff they've been doin' in these parts, he thinks maybe we got a mutation on our hands."

What? Well, Mort, the way I understand it, a mutation is an animal that don't turn out exactly like his folks—sort of a freak, you might say. This here radiation from the atom bombs is supposed to cause it.

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Anyway, the Old Man says, "Tad says this mustang looks different, somehow." And he sort of looks off towards the hills. "Why don't you round up some of the boys, Frank, and we'll go have us a look."

That's when I got the whole picture. The Kid had taken a notion that he wanted that horse, and the Old Man was going to give it to him. Well, it wasn't any of my business—I don't mind cuttin' out a horse for the Kid any more than I mind cuttin' one out of the herd for a rodeo. In fact, I sort of cherished the idea of watchin' the Kid try to ride a wild mustang. Might be worthwhile watchin'.

Well, me and some of the boys saddled up and rode out with the Old Man and the Kid to find this here golden horse.

Morty, let me tell you that we had the dangdest time catchin' that ornry animal. He was skittish as a new bride and a damn sight faster on his feet.

We spotted the herd out near Smokey Bend and reined up a quarter of a mile away to look 'em over. We were on that little rise just north of the river and we could look down on the mustangs and see most of 'em.

Naturally, we spotted the palomino right off. You couldn't of missed him. The Old Man got his field glasses out and took a good, long look, and passed 'em to me.

Well, sir, I never seen a horse like that'n before. I could see what the Kid meant when he said it was different. It was a golden blonde all over, except for a white spot on its forehead and the dark hooves. And it wasn't just the color, either—the neck and head were just a shade too long to look natural on a horse, and his chest was as broad as a Percheron's. And there was one other thing queer about him that I didn't notice until I'd looked for a while.

Now, you mightn't believe this, Mort, but that mustang's eyes were as blue as sapphires! Yes, sir, just as pretty a blue as you'd ever want to see.

Oh, you'd heard, eh?

Well, anyway, I handed the glasses back to the Old Man and said, "Pretty eyes."

"Mighty pretty," he says, looking at me peculiar. "Mighty pretty."

We both knew right then that this wasn't no horse that had strayed off from nobody's ranch and gone wild. If anybody had ever had a blue-eyed blonde for a horse, we'd of heard about it, and if anybody'd lost such an animal, there'd of been a reward out, you can sure bet.

The Old Man looks for a mite longer, then he says, "Okay, boys, let's corral that beauty. And watch yourselves. Anybody causes that animal to break a leg, I'll shoot him instead of the horse."

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So we started down the slope gentle-like, so's not to spook the herd. The Kid stayed back on the rise to watch.

Well, sir, I tell you that horse didn't no more want to be caught than a bar of soap in a bathtub. We tried to box her up by goin' in easy, but she was the first one to notice what we was up to, and she spooked the rest of 'em. She—

What?

Well, sure I said, "she." The Kid thought she was a stallion, and so did the rest of us until we got close up and down level with her. But she wasn't—she was the biggest, toughest-looking mare you ever seen.

And run! We couldn't even get close to her if she didn't want us to. Every time we got up near, that horse would take off like a stray piece of lightning, left our nags so far behind that we knew we'd just have to find a better way.

The trouble was, that horse was smart. She knew that we didn't intend to hurt her, so we couldn't scare her any. She'd just as soon come at us as run away, and she was slick as buttered glass. And the damn critter didn't really try to run very far. She'd only circle around, stayin' just out of range.

Pretty soon, the rest of the herd was so spooky that they took off down toward Barton's Creek, but that mare didn't go with 'em. She just stuck around to laugh at us poor fools tryin' to catch her.

Well, finally, we circled around her and started closin' in. We figured we had her this time, but she just waited until we were really close—just stood there, chompin' grass until we were almost on top of her—and then she took a flyin' leap between me and the Old Man and tore up the rise toward the Kid.

Well, danged if that Kid didn't have his rope out. That mare is comin' at him at a full gallop, and he just sits there, waitin', with his lasso ready.

The Old Man bellows at him. "Tad! Don't you rope that horse! She'll break a leg at that speed!"

But the stupid young sprite don't even hear—all he sees is that horse.

And when she gets close enough, he throws the loop over her neck.

Now, you know as well as I do that that would have killed any ordinary horse. But not this baby. She comes down on all fours and skids herself to a stop as if she'd had air brakes. Didn't even tighten the loop much. Then she just stands there, meek and peaceful as you please, while we ride up.

The Old Man tries to chew the Kid out for usin' a rope, but there ain't much he can really say. That horse had made fools out of the rest of us, and the Kid had caught her slicker'n a whistle, so the Old Man had to pretty much let it go.

Well, we led that mare back to

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the ranch and put her in the corral, and the Old Man gave orders to break her to saddle.

Three days later, there wasn't a man on the ranch that didn't have bruises all over him. Jake Moffat had a busted arm, Ed Lowey had a dislocated shoulder, and I had a sprained ankle. There wasn't a man in the outfit that had stayed on that mare more than thirty seconds.

The Kid wanted to try—he was the only one who could get close enough to her to put a saddle on her. But the Old Man said *No*, and he said it loud and hard.

And then, one mornin', we hear a ruckus at the corral. I limp over on my game leg as fast as I can, and the rest of the boys come, too, as best their bruises will let 'em.

And there's the Kid, sittin' on that golden horse, holdin' on for dear life, while she cavorts around the place. But he sticks with her, and finally she gentles down and trots around as nice as you please. Some of the boys said she wasn't buckin' as hard by a long shot as she had when they were on her, but I figure that's just a mite of jealousy creepin' in.

Well, of course, when the Old Man hears about it, he gives the Kid all kinds of hell for disobeyin' orders, but, again, there ain't much he can really say. Actually, he's pretty proud of the Kid, and he can't help showin' it.

That evenin', a bunch of the boys decide they're gonna take the Kid in to town and show him a real good time. They figure it's worth a little celebration.

Oh, you saw it, Morty? Yeah, they had him in here, all right. Sam knows the Kid ain't old enough to drink, but he let on that he didn't.

The Kid said something about losin' a few buck at Blackjack. Said it wasn't his lucky night.

Where'd they go from here, Mort? Oh? Well, I guess that bunch *really* painted the town red, eh? Bet Mabel and the girls were glad to see 'em, huh?

Yeah, I know he did a lot of braggin' about his gold horse. That's why he decided to ride her into town the next day—just to show off that horse.

What happened? Well, that night in town hadn't done him much good, I guess 'cause he climbed on, that filly took one leap into the air, and the Kid hit the ground. Knocked colder than an Amarillo blizzard—busted his collar bone and his left arm and had a concussion for a week.

The horse cleared that corral fence like she was flyin' and took off. We ain't seen her since.

Was she a mutation? Well, she must've been. The Kid said that that spot on her forehead was the nub of a horn, and who in the *Hell* ever heard of a horse with a horn?

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Recovering from an astonished—and astonishing—moment of speechlessness, the Good Doctor talks about the abolition of distinctions. The more it changes, in short, the more it's one thing.

DETHRONEMENT

by Isaac Asimov

NATURALLY, A CONSCIENTIOUS PROFESSIONAL TRIES TO KEEP UP with his field, so when nobody is looking I abandon my lofty role as universal authority and secretly read up on things. (I trust all my Gentle Readers will keep this confidential.)

Among the things I try to keep up with is a periodical called *Science,* which is published weekly by the *American Association for the Advancement of Science.* For those of you who have never seen it, it is a very respectable and learned journal dealing with matters of current interest in science written by and for professional scientists.

There are leading articles (two or three) rather more detailed and technical than those in *Scientific American,* but perhaps less detailed and technical than those in the more specialized learned journals. There are also about half a dozen short reports describing research work in progress. There is a department called "Science in the News," which usually deals mostly with political developments having to do with scientific research; and, in addition, an excellent department given over to book reviews.

It's very worthwhile leafing through *Science* for matters of interest, and every issue will hold something that is worth a thorough reading by any professional. You can understand that I was confirmed in this

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view to a point of almost monomaniac intensity when, over the space of the last half year, two of my books were reviewed in the columns of *Science* in so favorable a fashion that I distinctly heard beautiful violin music in the background as I read them.

I am going to have to overcome my natural modesty (which is something I have to do all the time and which, I must admit, is a very easy thing to do) and talk about one of the reviews, because it is involved with this month's column.

The review is that of my two-volume book, THE INTELLIGENT MAN'S GUIDE TO SCIENCE. The review appeared in the 16 December 1960 issue of *Science* on page 1830. (That's not a misprint. *Science* numbers its pages continuously through 26 issues.)

It begins with, "Here, at last, is something new in popular science writing . . ."; says some other nice things; then, down about the middle of the review, it says: "For him (me, that is, I.A.) . . . biology is a system that proceeds from biochemistry to the associated subjects of neurophysiology and genetics. All else, as they used to say of the nonphysical sciences, is stamp collecting."

Now mind you, this is the reviewer talking (who happens, by the way, to be Professor Derek J. de Solla Price, a historian of science, of considerable reputation, at Yale University) and not myself.

He has analyzed my views correctly, to be sure, but I did not myself, anywhere in the book, openly dismiss such branches of biology as cannot yet be brought down to the physical science level, as "stamp collecting." What I did do, however, in view of the fact that I had only a quarter of a million words in which to discuss all of science through all of history, was to select only those topics which I felt were of greatest interest and significance. I left out completely (and on purpose) traditional biology. I suppose that in itself was fairly insulting to the traditional biologist. Had I but known the repercussions.

However, half a year after the review, I picked up the 2 June 1961 issue when it arrived and disposed myself in my armchair to leaf through it leisurely and to select material for careful reading later.

On page 1745, there began a lead article entitled "In Defense of Biology," by Professor Barry Commoner, who is a plant physiologist at Washington University in St. Louis. He was the retiring vice-president of the *American Association for the Advancement of Science* and on 27 December 1960, he gave his farewell address at the annual meetings sponsored by that organization. (I had a chance to attend but chickened out because of the inconvenience of travelling during the Christmas-New Year period. Had I but known—)

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This article was a reprint of that address.

I glanced at the first few paragraphs and was wondering whether I ought to read it thoroughly, when I caught my own name in print. (I'm good at that. I have trained myself to pick out my own name at a glance in a solidly packed page of microscopic print. It comes from reading letter columns in sf magazines.)

Naturally, that settled my mind. I went back to the beginning and read the article with an intensity beyond imagining and it turned out that Professor Commoner was tipping his lance in defense of biology against *me.* That realization left me in the condition that the Kindly Editor has been waiting for, lo, these many years—i.e. momentarily speechless.

Apparently what roused Professor Commoner's ire particularly was the reviewer's crack about "stamp-collecting." Having quoted that with disapproval he went on to select a sentence that was actually in my book and pounded away at that. It was the sentence that opened the second volume and it goes:

"Modern science has all but wiped out the borderline between life and none-life."

To this, Professor Commoner took violent exception. He went on, immediately after quoting my sentence, to say (and these are his words):

"Since biology is the science of life, any successful obliteration of the distinction between living things and other forms of matter ends forever the usefulness of biology as a separate science. If the foregoing sentence is even remotely correct, biology is not only under attack; it has been annihilated."

He goes on further to say that I base my remark concerning the vanishing distinction between life and non-life on the theory that all life processes are dependent on the functioning of nucleic acids and that I maintain that this functioning, although terribly complex, follows the ordinary laws of chemistry and physics. In this, Professor Commoner interprets me correctly.

However, he takes an opposite stand and elaborates a point of view which I can boil down to the following quotation from his article, one which he labels as his "chief argument." It goes:

"Analysis of living systems, based on modern physical and chemical theory, leads to the conclusion that life is unique and that it cannot be reduced to the property of a single substance or of a system less complex than a living cell."

Now I have written to *Science* offering to rebut and they may or may not accept my offer, but that scarcely matters. This column is

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my favorite soap-box anyway, and one upon which I can speak freely.

Let me begin then by saying that politics and economics are not the only fields in which conservatism is to be found. There are conservatives in science, too—but they usually lose out and therefore make less of a mark upon history. And, very often, despite their profession, their defense of the past is based more on emotion than upon reason.

Consider, for instance, that Professor Commoner feels that if it is true, as I say, that the distinction between life and non-life is being wiped out, then that "ends forever the usefulness of biology as a separate science . . . it has been annihilated."

With all possible respect, I can only ask: Is this a rational view?

Let's consider. There was a time when the universe was considered as consisting of two grand divisions, the earth and the heavens. Each was distinct, each was unique, each followed separate laws. Earth was corrupt and changing; heaven was perfect and unchangeable. Earth was motionless; heaven and all it contained moved in grand circles.

Yet even with this view it was possible for men to study the nature and constitution of the earth and it was also possible for them to arrive at results we would consider valid. The Greeks, for instance, worked out the size and shape of the earth quite accurately.

Nothing much further than this was done because of the primitive state of science generally, but more could have been done. The earth's mass could have been determined without reference to the heavens (as it was, indeed, eventually determined). Earthquakes could be studied and the earth's internal structure conjectured upon. Oceans could have been plumbed. The atmosphere could have been analyzed.

Without reference to the heavens at all, geology could have become a science of respectable accomplishments.

Suppose this had actually happened and that then, in the time of Copernicus, in 1543, the heliocentric theory had been announced. The earth, it would turn out, was just a planet and one of a number of planets, revolving about the sun just as Mars and Venus did.

Would there then arise a howl from the geologists?

Would they say: This ends the distinction between the earth and the other planets. It ends forever the usefulness of geology as a separate science. Geology has been annihilated.

Well, would *this* be reasonable?

Of course it would not, because the facts are quite the contrary. The study of the earth is made all the more meaningful by the fact that the earth is not unique among the objects of the universe.

At no time in history, in fact, have geologist and geology been as

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important as they are now. This is not *despite* the fact that space studies have grown so glamorous and popular, but *because* of it. The Mohole project, for instance (see "Recipe for a Planet," F&SF, July 1961) is important not just because the information it gathers will be of use to geologists, but because that information will be of use to astronomers as well.[1] To wipe out the distinction between geology and astronomy is to make each one more important.

I see no earthly reason, then (aside from emotional upset), to consider biology annihilated, if the distinction between life and non-life vanishes. Rather, its importance will be heightened when physicists and chemists come to realize that biology's deepest insights will be of direct service to them.

Science is a unit, and if it seems broken up into arbitrary divisions that is the fault of the age of intellectual over-specialization in which we live. Scientists who labor to make the partitions between the divisions inpenetrable and insurmountable are doing science a great disservice.

And what about Professor Commoner's "chief argument," the one in which he claims that life is unique and that it cannot be the property of anything less complex than a living cell?

This in itself actually represents a great advance in thinking, for it was only a century and a third ago that the cell theory was advanced and that cells were maintained to be the unit of life. Before that time, it was felt that life could not be the property of anything less complex than a living organism intact enough to include the essential organs. I have a feeling that Professor Commoner would have strenuously supported that view against the new cell-theory notion, had he lived in 1840.

Now, without going into technical details and without in any way attempting to match Professor Commoner's intensive knowledge of biology, I can only say that I am certain that life *is* a function (a highly complex one, to be sure) of a molecule and not of the cell, that life is *not* uniquely different from non-life, and that the distinction between life and non-life *is* disappearing.

My reasons are based not upon the actual detailed discoveries of the moment, but upon a consideration of the whole history of science. They are based not upon where we are but upon where we are going.

I have mentioned Copernicus's development of his heliocentric theory,

[1] If you want to read up on Mohole, I strongly recommend A HOLE IN THE BOTTOM OF THE SEA, by Willard Bascom (Doubleday, 1961)

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for instance; his notion that the earth is but a planet like other planets, circling the sun as the others do.

What is that but the dethronement of the earth? From a highly special position as center of the universe and as the only motionless body within it, it suddenly found itself lost in the shuffle, a body like other bodies.

Look upon it in this fashion and the history of science becomes the long story of repeated dethronements, one after another.

Thus, when Copernicus dethroned the earth, he left the sun as a new unique body. *It* was the center of the universe, *it* was the one motionless body. If earth was not unique, it at least revolved about a sun that was.

That did not last either. Eighteenth century astronomers gradually accepted the notion that stars were suns, and that our sun was by no means the only body of its sort in the universe.

In the nineteenth century the distance of the nearer stars was determined, as were the sizes and motions of those stars. Our sun was found to be not motionless after all, and it was dethroned in that respect. Beginning with the astronomer, William Herschel, the sun began to be considered part of a galaxy, one of many millions of stars, moving about in vast circles about some unimaginably distant center. What's more, the sun was but an average star in every respect. Yet it retained a last scrap of its uniqueness, for it still seemed to be just about in the center of the Galaxy.

Then, in the 1920's, newer techniques were used for probing the Galaxy (see "The Flickering Yardstick," F&SF, March 1960) and it turned out that the sun was not in the center but far toward one end. Furthermore, there was not one galaxy, but millions upon millions of them.

Our galaxy, at least, seemed for a while to be unique, for it was larger by far (so it seemed) than any other. Then, in the 1940's, a new scale of distances was worked out and our galaxy sank into ordinariness.

We are now living on an ordinary planet circling an ordinary star that forms part of an ordinary galaxy. Astronomical dethronement has been complete.

To the Greeks, the laws of motion existed in two forms. On earth, objects moved in a number of odd ways and motion always stopped. In the heavens, bodies moved only in grand circles and combinations of circles and motion never stopped.

Copernicus and Kepler described heavenly motions in a more useful

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way than did the Greeks, and Kepler, in particular, showed that heavenly motion was not circular.

Galileo, about 1590, worked out the laws governing motion on earth, founded the science of mechanics, and showed motion on earth was not irregular but followed set and simple laws.

But it was Newton, in 1683, who made the grand synthesis. He took Galileo's new science of mechanics, organized it, presented it to the world with masterly simplicity and clarity and showed that the same set of laws could be used to explain not only the motions of bodies on earth, but also the motion of the heavenly bodies. The same laws applied to earthly mechanics and to celestial mechanics. (And this did not annihilate the study of ballistics—it made it more important.)

Nor was this the only distinction abolished between heaven and earth. In 1860, the spectroscope was invented and soon thereafter applied to the heavens. It turned out that the sun and the stars were made up of precisely the same elements of which the earth was composed. In the one legitimate case in which an element was discovered in the heavens that was not known on earth, it was discovered on earth thereafter (see "The Element of Perfection," F&SF, November, 1960).

Even up to the 1930's, the existence of the Solar system, at least was considered as possibly unique, even if neither earth nor sun was unique separately. Solar systems originated, it was thought, in the collision or near-collision of two stars, and such accidents were so exceptional that ours might well be one of only half a dozen planetary systems in all the Universe.

No one believes that anymore. They may not quite know what to believe instead, but they don't believe *that*. It seems quite certain now that whatever the details of the process by which the planets were born, it was a process that involved the sun alone and did not require the interference of any colliding body. Whatever influence the rest of the universe had (in the form of gravitational force or radiation pressure, say) was exerted from a distance.

Planetary systems are now considered the rule and our Solar system is anything but exceptional. It, too, has been dethroned.

And aside from astronomy?

Chemistry has made all matter, so infinitely varying in appearance, consist of several dozen different types of atoms. Nuclear physics has made all atoms consist of a considerably smaller number of sub-atomic particles. The distinction between particles of matter and blobs of radiation has been blurred since, in the 1920's, particles were shown to behave like waves and waves like particles.

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Even if we don't get down to very fundamentals, distinctions are blurred and uniqueness is dethroned. For many years, chemists felt that all chemical substances could be divided into two groups: organic (originally formed by living organisms) and inorganic (everything else). The two seemed subject to different set of laws and it was widely held that organic substances could not be formed from inorganic. Some sort of "life force" was required that was not at the disposal of the laboratory worker.

Then, in 1828, Friedrich Wohler *did* form an organic substance (urea) from an inorganic substance (ammonium cyanate) and within a few years, many other organic substances were formed from the inorganic world. The organic substance was dethroned—its uniqueness had begun to crumble.

In 1857, William Perkin synthesized the first artificial dye and by 1900, thousands upon thousands of organic substances that did not exist in nature had been formed. Man was not only imitating the "life force," he was improving upon it. The dethronement was complete.

Of course, man was synthesizing only relatively small molecules. What about giant molecules, like those of the proteins? Living cells could bring about all sorts of reactions very quickly and under very mild conditions, which the lab man could not bring about at all, or, at best, under strenuous conditions and then inefficiently. The cellular ability was due to the presence of special protein molecules called enzymes within the cell.

In the 1890's, it was felt that only within the cell could those enzymes work. For biochemists then, like Professor Commoner today, felt that as soon as you got below the level of the cell, you had left "life" behind.

Then, in 1897, Eduard Buchner ground up yeast cells and filtered the juice and found that this juice (quite without cells and quite "dead") fermented sugar as well and as efficiently as the living cells could. The distinction between cells and non-cells blurred.

And in the 1950's biochemists began to learn to synthesize the more simple protein molecules and the synthetic product has all the properties (including the effect on the body) of the natural one.

But life itself? Well, here we have one great 19th century advance that seemed to work in the opposite direction, in that of enthronement. Louis Pasteur, in 1860, finally established the impossibility of spontaneous generation. Life could only arise from previously existing life and not from dead matter. This seemed to establish the uniqueness of life.

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It is important, however, to remember *exactly* what Pasteur proved. He showed that life could not develop from non-living matter in the space of a few weeks under the particular conditions he used, the present atmosphere, for instance, and the present solar radiation.

But what if a different atmosphere were involved, and a different type of solar radiation and the whole ocean was the reaction flask with a billion years or so for the reaction to take place? In theory, the non-living matter of the primordial ocean, bathed in the rays of the primordial sun and saturated with the gases of the primordial atmosphere would, after a long interval, develop life. In fact, experimental methods have indicated that the very first steps in the process might indeed take place as theory indicates.

Scientists feel reasonably certain that on any planet similar to earth (and there are many millions such in the universe, they now feel sure) life would eventually exist.

Not only is the distinction between life and non-life blurred in this respect but the earth is, in all likelihood, dethroned from its unique position as a life-bearing world—even, perhaps, from its unique position as an intelligence-bearing world.

Nor need life be entirely a product of proteins and nucleic acids (see "Not As We Know It," F&SF, September, 1960). The protein molecule and even the carbon atoms may yet be dethroned from their unique connection with life.

And what about man?

In 1859, Charles Darwin advanced his theory of evolution, in which, for the first time, rational and, indeed, inescapable arguments were presented to show that one species changed into another, that life itself was one grand unrolling ("evolution" means "unrolling" in Latin) of unified life into greater and greater variety under the lash of the blind and random forces of natural selection.

In particular, fossils of "pre-men" have been discovered, since the 1890's, through which man loses himself and melts into a complete lack of distinction from other species.

The "species" was dethroned as the unit of life-form. Man himself was dethroned as a creature unique and different from all other forms of life.

To many non-scientists (and even to some scientists) the successful obliteration of the distinction between man and other animals, at least on the physical level, threatened to end forever the usefulness of religion. Religion to them seemed threatened with annihilation.

Their fears were, of course, groundless (as Professor Commoner's

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fears are today). Religion survived and, in its essentials, it was strengthened, for I don't know how one can argue that religion can be weakened by being freed of dependence upon a false view of the material world.

Now, then, with scientific advance moving always in this one direction of dethronement . . . in this one direction of obliteration of distinction and of removal of uniqueness . . . in this one direction of making a single set of laws, a single viewpoint, cover widely disparate phenomena . . . in this one direction toward culmination in a grand and beautiful simplicity—what are the odds that, suddenly, life will turn out to be unique, that, suddenly, there will remain a distinction forever established between "life" and "non-life."

Surely, the odds must be prohibitively high against that.

I predict, with great confidence, that more and more of the properties of the phenomenon that we think of as "life" will be interpreted on the basis of generalizations which apply also to systems we think of as "non-life." I predict that mankind will be able to construct systems that will be considered "non-life" but that will, more and more, seem to duplicate properties of what we consider "life." The distinction between "life" and "non-life" *will* vanish.

In fact, I also see the end of a further distinction, for to me there seems no essential, vital and insurmountable difference between the human brain and the computer. The computer, complex enough, will be indistinguishable from a brain. And so the last distinction will be blurred, that of "mind" and "non-mind."

Nor does that last blurring seem distressing to me. If a mechanical mind is ever devised that is equal to the mind of a man, then we have a machine that *is* a man. And if we build one that is better than a man, then he is a superman and should replace us on this planet.

Let me quote from my book THE INTELLIGENT MAN'S GUIDE TO SCIENCE a passage which Professor Commoner does not quote in his article, but which I feel he may consider more outrageous than any that he did quote. It is to be found on page 745, and it reads:

"What achievement could be grander than the creation of an object that surpasses the creator? How could we consummate the victory of intelligence over Nature more gloriously than by passing on our heritage in triumph to a greater intelligence—of our own making?"

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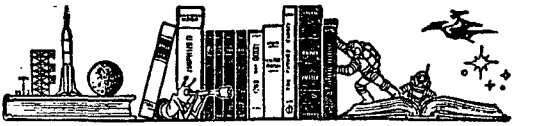
BOOKS



STRANGER IN A STRANGE LAND, Robert A. Heinlein, G. P. Putnam Sons, $4.50

MUSIC OF THE SPHERES, Guy Murchie, Houghton Mifflin Company, $6.95

WHAT THE DEVIL HAS HAPPENED to Robert Heinlein? He has succeeded in writing the first half of his novel like a master, and the second half like a tyro. This department, usually quick to abandon a faltering book without finishing it, hung on for the last 200 pages of STRANGER IN A STRANGE LAND out of faith in the Grandmaster, and out of disbelief. "This can't be happening," we told ourself. The story must pick up again sooner or later. The Old Pro won't let himself maunder on to the end." We were wrong.

STRANGER IN A STRANGE LAND starts off with the characteristic Heinlein bodyblow that hangs you gasping on the ropes. The first spaceship has been sent to Mars, manned by four married couples. Communications are abruptly and inexplicably cut off the day before the ship lands; World War III intervenes; a second expedition doesn't get to Mars until twenty-five years later.

There the crew finds a remarkable alien Martian culture, and there they locate the sole survivor of the original expedition. He is Valentine Michael Smith, born on Mars of human parents he never knew, raised and educated by Martians, a Terrestrial being who thinks, feels, and behaves as a Martian. This is a superb concept.

Smith is persuaded to return to earth. There are magnificent passages in which Mr. Heinlein depicts the reactions and confusion of this young alien in what should have been his familiar homeland. There are economic complications and political machinations resulting from Smith's return; he is kept under lock and key in a hospital; a brash young reporter, Ben Caxton, and a bright young nurse, Gillian (Jill) Boardman, maneuver to free him; plot and counterplot, punch and counterpunch, in the familiar Heinlein style.

Smith finally escapes and takes refuge in the home of "Jubal E. Harshaw, LL.B., M.D., Sc.D., bon vivant, gourmet, sybarite,

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popular author extraordinary, and neo-pessimist philosopher . . ." Harshaw is also Mr. Heinlein's mouthpiece, and one of his favorite creations. We've met this salty old character, full of philosophy and worldly wisdom, in many other Heinlein stories.

Meretricious government officials search desperately and unscrupulously for the Man From Mars, finally locate him in Harshaw's bohemian retreat, and launch a frontal attack. Harshaw outmaneuvers and outwits them all, and wins recognition and safety for Valentine Michael Smith by Page 216.

Up to this point it has been a typical Heinlein story, and we expect it to continue its development. Alas, it's at this point that the story ends. In the last 200 pages the novel degenerates into a mishmash of erotic incidents which merely provides Mr. Heinlein with the opportunity to deliver himself of some rather sophomoric opinions expressed in freshman English.

Most of the second half of the book is dedicated to sex and salvation, with Smith turned into a Messianic figure as written by Frank Yerby out of Sinclair Lewis. It was, we believe, Mr. Heinlein's intent to weave religion and sexual relations into a related design, but he succeeds only in spicing revivalism with voyeurism. And he has managed to make the two most exciting and potent forces in our culture seem dull and unattractive.

We will not make a detailed criticism of Mr. Heinlein's religious philosophy, which some may find interesting; nor will we attack his views on sex, which others may find adult. However, we must caution him on his dialogue (never a strong point with Mr. Heinlein), which has now become irritatingly mannered.

Aside from the phoney, folksy slang of Jubal Harshaw, which grates on the ears, and the invention of a new verb, *to grok*, with which Mr. Heinlein beats his readers to death, it seems virtually impossible for any of the cast to reply to a question or respond to a statement without first uttering "Huh?" or "Uh . . ."

In past books Mr. Heinlein usually reserved this device for children in an attempt, we presume, to achieve realism in their conversation. Perhaps writing juvenile novels has made him careless. Now all his characters speak this way, but the net result is not realism, it's the impression that they're either hard of hearing or incredibly dense.

And yet, despite these disappointments, there are wonderful touches in the book: fleeting glimpses of the Martians and their alien thinking which become vividly real; Valentine Michael Smith's strange powers and atti-

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tudes, and his interesting attempts to understand and adapt to Terran patterns; hilarious yet savage extrapolations of our contemporary American culture.

Mr. Heinlein is still the Grandmaster when he sticks to science fiction; it is only when he attempts to become a thinker that he fills us with sorrow.

MUSIC OF THE SPHERES by Guy Murchie is the finest single-volume popular science book we have ever read, and we urge all readers of this department to buy it for a bedside book. It can be dipped into at any spot and read without the need to know what has gone before; it can be dropped at any page without danger of loss of continuity; it can be picked up again any time later, without any difficulty and with the same interest. In short, MUSIC OF THE SPHERES is rather like a perfect friendship.

Mr. Murchie has a lucid yet colorful style, highlighted with a deft turn of phrase, and charged with his own fascination and delight with science. He writes the way one dreams a brilliant professor might chat about his own work, technically but understandably, significantly yet humorously. We have met only a few men who fulfilled this dream: the great biochemist, Kopac, at New York University, a few of the curators at the American Museum, an aromatic chemist (who was a dead ringer for Pasteur) in Grasse, perfume center of France. Mr. Murchie is all of them in 600 packed pages.

He discussed, traces the history and development, and sets forth the present problems and enigmas of almost all the physical sciences. Leafing through the pages at random at this very moment, we find: Weizsacker and Bethe on helium synthesis inside the sun, relative magnitudes of the universe, sea wave behavior, the accident that won a Nobel prize for Davisson for confirming de Broglie's theory of the wave nature of electrons, the evolution of the musical scale, Heisenberg on golf balls and atoms, Einstein's Principle of Equivalence. Twenty years ago this book would have been the science fiction author's *vade mecum*, and it may still serve that purpose today.

What Mr. Murchie understands, he makes you understand as you never have before, and what he doesn't understand he has the courage to admit. This warms the heart of this department which was trained in laboratories to realize that negatives are also results. But there is very little that Mr. Murchie doesn't understand, and his grasp is so enormous that he merges the individual departments of science into a vast, flowing whole, exciting and enchanting the reader.

We have only one trivial cavil;

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we do wish Mr. Murchie had not illustrated the book himself. His diagrams have a certain quaint charm, but his drawings, especially of human beings (unless copied from professional illustrations), are downright dreadful. But don't let this carping deter you. MUSIC OF THE SPHERES is the perfect popular science book; you must buy it; you will never stop enjoying it. —**Alfred Bester**

COSMIC GALL

Every second, hundreds of billions of these neutrinos pass through each square inch of our bodies, coming from above during the day and from below at night, when the sun is shining on the other side of the earth!—*From "An Explanatory Statement on Elementary Particle Physics," by M. A. Ruderman and A. H. Rosenfeld, in American Scientist.*

Neutrinos, they are very small.
  They have no charge and have no mass
And do not interact at all.
The earth is just a silly ball
  To them, through which they simply pass,
Like dustmaids down a drafty hall
  Or photons through a sheet of glass.
  They snub the most exquisite gas,
Ignore the most substantial wall,
  Cold-shoulder steel and sounding brass,
Insult the stallion in his stall,
  And, scorning barriers of class,
Infiltrate you and me! Like tall
And painless guillotines, they fall
  Down through our heads into the grass.
At night, they enter at Nepal
  And pierce the lover and his lass
From underneath the bed—you call
  It wonderful; I call it crass.

—JOHN UPDIKE

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Over the years, this magazine has published a number of columns by distinguished scholars and critics in science fiction. It has occurred to us that it might be useful to find out how the science fiction writer reacts to advice given him in critical essays and book reviews. This month, we have invited comment from the author of Rogue Moon, *originally published here and subsequently nominated for the 1961 "Hugo" Award as the best science fiction novel of the previous year.*

Algis Budrys, who has been writing and selling science fiction for the past ten years, is, to all intents and purposes purely a professional writer. It is from this pristine viewpoint —for which this magazine disclaims all endorsement and responsibility—that he speaks as follows.

ABOUT SOMETHING TRULY WONDERFUL

by Algis Budrys

THERE MUST BE SOMETHING truly wonderful about science fiction. Not even the wide, vast, and occasionally weedy "mainstream" of general literature supports such a proportionate number of people publicly concerned with where it has been, where it is going, and where it should go in preference. In the light of the currently prevailing critical opinion no other field finds itself so persistently measured by its present inability to resemble another.

For several years, now—1956 was about the time the phenomenon really took hold—one of the surest ways for an sf writer to judge his accumulated esteem has been to count the number of times he is critically described as being a writer who has finally learned enough to leave sf and attempt doing work for the "mainstream."

There are many people who don't feel that way about science fiction. But right at the moment, and particularly in the public eye,

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science fiction very often seems to be saying that (1) Obviously the best current science fiction is nevertheless not as good as something else to be found elsewhere, and (2) That if we all work very hard, some day we may develop ourselves to the point where we can imitate the "mainstream" so well that (and what other conclusion is as logical, from these premises?) sf will have become indistinguishable from it and we won't have to put up with it as a separate field at all.

It seems to me this is the conclusion many of us may draw in the backs of our minds. I don't see how any writer in the field can escape the nagging feeling that he is expected to work himself out of it if he can, and perfect his craft to the end of expunging the field if he can't.

Now, having read a number of critical essays, and book reviews in the form of critical essays, I am well aware of the ease with which very large conclusions can be drawn from premises too scanty to be limiting. And so I draw back a little from the concluding sentence in the paragraph above, and think on what effects might be observed in the field, if it were at least partly true.

It seems to me that if it were true, then some people in the field, loving it, appreciating it, remembering how much it brought to them in the past, would want to do an about-face—would want to force a return to the science fiction of the 1930's and early 1940's, when we were bursting with technological enthusiasm and had no inkling that less than a score of years later some of us would be working to bring on the night.

It seems to me that if it were true, then some writers in the field would become extremely conscious of themselves not as members of a team—proponents of a 'school,' if one prefers—but as individual careerists first and foremost. The writing of science fiction would become only an incident in a much larger literary life plan, and, since many science fiction techniques are incompatible with the "mainstream," we would find these writers steadfastly avoiding any training in these to them incidental techniques.

It seems to me that if it were true, we would find the critics—not all the critics; perhaps not even most of the critics, but the most accepted critics, in a climate partially created by those critics—judging new work as being indicative either of a future merger with the "mainstream" or of an attempt to return to the old-fashioned virtues.

Some critics would approve of one alternative, and some of the other. It does not matter whether any of these things seem "good" or "bad." Nor does it seem reasonable

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to suppose that what is happening —whatever is happening—is the result of conspiracy rather than normal evolutionary processes. But the chances are slim that work along or toward any third alternative will be publicly recognized as such, except possibly by the readers, who, incidentally, seem to have lost almost all the channels they used to have for communicating *their* opinions in public, where they could be useful.

If these things can be observed to be taking place, that would be quite a cleft stick to be caught in. If we were caught in it, we would have two alternatives, I think. One of them would be to go along with the process—to try to transform our sf writing into an instrument for personal ambition, neglecting all needs, the readers' included, for the sake of training ourselves, here, toward a career elsewhere; failing in that larger ambition, to confine our efforts, here, toward the best imitation we could deliver of what seem to us to be the best features of another field.

The other alternative would be to work toward finding another alternative; to give up the notion, if we have it, that we must influence ourselves and others in the field away from the field, and to search for what is both artistic *and* unique in science fiction.

For certainly there must be human situations—genuine human situations, not merely plot problems—which can result only from the impact of humanity upon the Universe. Some of them are certain to be quite adventurous in and of themselves, and all of them can certainly be meaningful to almost every human being, for we all do impact upon the Universe from the moment we are dragged squalling into it until it finally pushes us, squalling, out, and even then is not done with working the clay we inhabited. The stuff of both adventure and art is there to be encompassed—nor are art and adventure in any way incompatible, to say the least—and a trained science fiction writer is potentially the best kind of writer to capture it not only with beautiful letters but with searching mind.

Somewhere within those parameters lies science fiction's unique *metie*, and no truly thoughtful person is in a position to say it is intrinsically inferior to any other. The "mainstream" writers who have confidently attempted to subsume it have not done well, except ephemerally—which ought to tell us all something about the advisability of trying to harvest the other man's crop—and have failed to do as much as we ourselves have now and then done; that is, produce a genuine work of art in science fiction.

I don't know that art is the proper objective of each and every story ever written—I believe it is

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not—but I bring in the above point as a supporting postulate for my feeling that one crucial test of a literary field's right to *develop* its own standards is the ability of at least some of its steady practitioners to produce at least one work of art—some creation that instantly shivers the onlooker's entire world—that could not have existed outside it.

But if we strike out on our own, we face several hardships, all of us. For one thing, it will become impossible to sustain a critical reputation in the field largely on the strength of one's knowledge of critical standards and methods in some other field.

It will become impossible to give professional advice to sf writers on the strength of one's professional training—even one's considerable professional training.

It will become impossible to sustain an sf reputation on the strength of a close resemblance between one's work in the field and other writers' work in another field.

And since the writers of science fiction in such a situation will have become interested in science fiction readers as their primary audience, rather than as a group of casual spectators watching an audition, it will probably happen that readers' opinion columns will return as a feature of the magazines—and that some readers may even be stimulated to become writers in their own turn. When that happens, of course, the need for copious scholarly and/or critical discussion as a directive force will have abated, and the self-conscious period in sf's history will have passed.

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The second, concluding, part of Gordon R. Dickson's new novel of warfare—and such attendant problems as ethics, the nature of courage, and the point of it all—in the distant, or semi-distant, future.

NAKED TO THE STARS

by Gordon R. Dickson

(Conclusion)

SYNOPSIS: *Section Leader Calvin Mark Truant, non-commissioned officer and professional Assault Soldier, finds himself in command of what is left of the four-Section Wing to which his Section belongs. The outfit—the 91st Combat Engineers of the Expedition against the Lehaunan, natives of the third planet circling Arcturus—has lost all its commissioned officers and its Wing Section Leader. Cal, as senior surviving non-com, is left with eighty-three sound men and a deliriously wounded officer of the Contacts Service, the personnel of which are not allowed to take any active part in combat operations. They are referred to as "gutless wonders" and are generally despised by the actual fighting men. Officially, their duty is to set up a basis for future coexistence with the alien enemies of the human race as quickly as the fighting Services conquer and subjugate them. They also fulfill the field roles of aidmen, interpreters, and prisoner-of-war camp administrators. But to the weapon-bearing Assault Soldier they generally appear as people who come along after the battles to give back free to the alien what the fighting man has just bought at the price of his own blood.*

Cal is concerned with the responsibility of getting the wounded, out-of-his-head Contacts Man back to the field hospital. The Lehaunan have a weapon which causes any operating power source to explode; and consequently all field ambulances operate only in daylight hours when due to the presence of a large radiating sun (Arcturus) in the sky, this weapon is less effective. It is now only

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about seven hours until dawn replaces the short Lehaunan night, which leads to a second problem.

The outfit which is now under Cal's command is in a fairly isolated position in some hills overlooking a Lehaunan small city, or town. It is night and a truce of the whole attacking human army with the Lehaunan forces has just expired with the recent setting of the sun. What makes this difficult is that the human forces are not sure what the concept of truce actually means to the Lehaunan people—there is reason to believe that the Lehaunan may consider the truce effective until sun-up.

In any case, the Lehaunan do not generally fight at night; but the city seems to be getting supplies from underground into what seems to be a military section of the city. Cal's dilemma is whether to attack now, with the advantage night gives his men over the Lehaunan, or wait and risk a possible dawn attack from the Lehaunan. Division orders leave it up to him; and his second in command and in some ways closest friend—Section Leader Walk Blye—is in one of his peculiar moods and refuses to offer an opinion.

Cal attacks. The city is taken easily, with a certain amount of wanton slaughter by the human soldiers. The "supplies" turn out to be ore in cars from a mine underground. Cal suffers a lapse of memory about the events following the town's capture, in the dawn hours; and the next thing he knows he is on a hospital ship bound for Earth, wounded.

Recovered and released, some months later Cal has a last vacation weekend with the Service Nurse he became acquainted with during the Lehaunan incident in which he was wounded, and then goes to sign up with the Armed Services, now as a Lieutenant. He is shocked by a refusal to accept him—based on a psychologist's evaluation of his memory lapse. He finds himself unwilling to undertake the complete psychiatric exploration which will uncover the real events he refuses to remember, and General William Harmon, leader of the Assault Team on the Lehaunan Expedition, refuses to intervene on his behalf. Harmon suggests however that Cal can find a job with the upcoming Paumons expedition by enlisting with the Contacts Service, commanded by General Walter Scoby.

Cal struggles against the degradation of becoming a "gutless wonder" for two weeks, but finally goes to see General Scoby. Scoby, an ex-Combat Services officer himself, and something of a character, apparently—he has a silver plate in his skull, and a cheeta for a 'seeing-eye-dog' to lead him about during occasional attacks of blindness—explains that Cal will lose his rank to enlist, but is the sort of recruit Scoby badly wants.

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Cal enlists, goes through Basic Training at Fort Norman Cota, Missouri, for a second time—without difficulty, but without making any new friends. His old friends from his former outfit, including Walk Blye, now a Warrant Officer, come visiting; but even with the aid of a certain amount of drinking they fail to become at ease with one another. And Walk ends up the evening by calling Cal 'gutless wonder' to his face. Though the rest help to pass it off as a joke, the chasm between Walk and Cal is now open and acknowledged.

Cal goes to Contacts Service Training School, learns as much as possible about the Paumons world and people, and graduates a Lieutenant in the Contacts Service. He then obeys Scoby's original request to come back and see him. Scoby flies into a temper at him for doing and planning to do only what is required of him.

". . . Far as the Assault Team's concerned," Scoby snarls, "you're a goddam aidman, and a goddam interpreter and a goddam headache. Far as I'm concerned, you're a goddam substitute working Christ and I expect you to produce!"

He assigns Cal as Contacts Officer to his old outfit—the last place in the Services where Cal would wish to work; and jeeringly asks Cal if he wants to back out. Cal accepts the post.

He leaves Scoby. Theoretically there is more training ahead of him. But the Paumons situation has chosen this minute to become explosive. Cal is swept up in a general muster of all Services personnel; and seventy-eight hours after that, he and everyone else connected with the Paumons Expedition Assault Force is space-born for the Paumons world, which circles the star of Bellatrix in the constellation of Orion.

Nine days later and twelve hours out of the Paumons world, Cal with the rest of the people in the expedition hear a short talk from their Commander, General Harmon. Harmon announces the area—a high plateau region of Paumons largest continent—where the first drops of equipment and personnel will take place, and reports that the initiating factor in the upcoming war was a takeover, by the Paumons, of human bases and people on the uninhabited planets of the Paumons system.

Returning from this talk, Cal is informed by Captain Kaluba, who is now commander of his old outfit, that he will not be going down with the outfit when it is dropped. Kaluba is responsible for his Contacts Officer taking no active part in combat actions, and he does not trust an ex-mule-brain like Cal to keep out of things if they go sour for the men in the outfit—as may well happen in the initial wave of an assault. Cal reminds Kaluba

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that he is supposed to be with the outfit, as Aidman (Contacts Officers' duty during first stages of an invasion) and threatens to write a letter of complaint to their superiors accusing Kaluba of personal bias against him, if the captain will not let him go down.

Kaluba swears, but capitulates. Twelve hours later, Cal goes in on the drop from the assault glider that carries the A and B sections of his outfit. He lands safely, and apparently most of the other men do too, in semi-wooded, hilly country. But they have barely grounded before Paumons seeker torps come over the hills at them.

The first torp hits the spot where Cal's wrist scope shows the senior officer of the two sections to be. Reaching that spot himself, to aid the wounded, he discovers seven men, five of them dead and one mortally wounded. The seventh man—possibly mortally wounded himself with a torp fragment in his belly—is Wajeck, Lieutenant in charge of B Section. Binding him up, Cal learns that Walk, who as senior Lieutenant should have been in charge of these two sections, was called off that duty just before the drop. And Wajeck has foolishly concentrated the non-coms of both sections around him—with the result that they formed the largest group in the seeker torps target field, and the first torp sought them out.

All non-coms of both sections are dead or out of action. Wajeck is clearly out of action. And the torps are beginning to pick off the leaderless and inexperienced men. They must be gathered up and moved out of the target area immediately. Someone must take active combat command of the men still able to move.

"You," says Wajeck to Cal. "You know what to do. Take over, for God's sake. You got to take over, Cal. Right now!"

CHAPTER SEVEN

THE MEN WERE BEING PICKED off, dying, and someone nearby was weeping. Looking around under the thunder and ground-shake of the nearby exploding torps, Cal saw the one who wept was the boy with his leg off. He was lying on his back looking at the sky and tears were running out of the corners of his eyes, back into the blond sideburns in front of his ears. Cal looked back at Wajeck, who was trying to get the command scope off his wrist. But his fingers were already too weak to stretch the expansion band over his hand and the scope kept slipping back.

"I can't do it," said Cal. "I'm sorry."

"You got to."

"I can't," said Cal. "Kaluba wasn't going to let me come on this drop because he figured on this. It's my orders."

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"You gut," said Wajeck, still fumbling like a baby with the expansion band. "You don't care about these men, you only care about keeping your uniform. Nobody lives by orders all the way, you know that." He was still fumbling with the scope band. "I'm going to make you do it. You lousy gut."

"Quit wearing yourself out," said Cal. He pulled the arm with the scope out of Wajeck's weak grasp of the other hand, and lifted arm, scope and all to his lips. He pressed the talk button. "All right, men," he said into it. "This is Lieutenant Truant. Lieutenant Wajeck is out of action, and so are all your non-coms. I'm a Contacts Officer and you know I can't assume command. You need somebody in here to take over the command scope. I'll help all I can once one of you gets here, but that's my limit. Those torp'll have us all in another ten minutes, unless one of you forgets all he ever learned about not volunteering. Somebody better make up his mind and get in here fast."

For a moment there were no explosions. In the unusual silence that suddenly seemed all wrong, Cal looked about him. There were two or three large holes in the little open space around him; but it looked like very little damage, just by itself. He had to remember that the seeker mechanism on the torps would almost certainly have found at least one man where every hole was now.

An assault soldier dodged out from behind a tree about eighty yards away and began running toward the rocks where Cal lay. Another broke cover off to the left about the same time; but, seeing the first ahead of him, dodged back again.

Cal counted the seconds, watching the man come on. But nothing happened. Only, the second after the man threw himself down beside Cal and Wajeck, a torp flitted over the hilltop and exploded to their left.

The man was in his thirties, small, with a sort of hazel-nut shaped face. Cal searched his memory.

"Mahauni?" he said.

"Yes, sir," said Mahauni. "What do I do?"

"What you think you ought to do," said Cal. "It's your show."

"Yes, sir. What would you do?"

"Get the men on the move. Keep them at least fifty feet apart." Cal pointed at the command scope on Wajeck's wrist. In a larger circle around the unit dots were the battalion signals, clustered now to their west. The two sections under Wajeck had come down in this little area with a low, open hill to their east, and, to the west, rising clusters of trees to a wooded horizon. Beyond that, about eight miles off, was battalion command.

"Perimeter's about five miles,"

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said Cal. "When I was a soldier they had anti-torp defences along battalion perimeters. I'll take the Lieutenant. You take the kid, there."

"Right," said Mahauni. He moved like an old hand, stripping the command scope off Wajeck's wrist and talking into it. He gave commands as if he might have been a section leader once.

"Ready to move," he said to Cal finally, the command scope now on his own thin, brown wrist.

They moved. The rest of it was simply horribly hard work, running and climbing with a wounded man apiece on their backs, shouting commands at the rest of the two sections of men, and being lucky when the torps came over. They made it over the hill and safely at last within battalion perimeter defenses, with fifty-three men left out of a hundred and eighty-one that had been dropped.

By the afternoon of the day of the first drops, Waves one, two, and three of the Initial Assault Team were down on the Paumons ground, and regrouped. They formed a curving, staggered line of battalion fronts, arcing around three Paumons cities and several hundred small settlements. The settlements were essentially housing centers, the cities essentially factory complexes for Paumons heavy industry which was supplied by power from volcanic taps.

Cal, having checked in with Kaluba, had received permission to leave for a few hours and make contact with his own Contacts Service command, for instructions. His supplementary and unannounced reason was to tell his story of the drop to someone like Scoby (who was in Contacts Service Command, along on the Expedition) before any other version of it should reach him. He had no idea where C. S. Command Headquarters were, so he hunted up Expedition Command, where he should be able to get directions. He found it just a little before sunset—a camouflaged cluster of domes in a little clearing surrounded by tall trees of the cottonwood-like variety.

"Contacts Service HQ?" he asked a Wing Section who was passing between the domes.

"Check with the Liaison Desk, Command HQ—Dome Eight," said the Wing Section, brusquely, looking only at the Contacts Services patch on Cal's breast pocket and not at Cal's face. He pulled away and hurried off.

Cal found Dome Eight. He stepped through the vibration screen at its entrance and found himself in an outer office with several empty desks and chairs. A door in a thin partition led to an inner office from which the sound of a conversation came.

It occurred to Cal, belatedly, that this would be time for evening

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chow. The people belonging to the outer office, including the Liaison Desk officer, would be off eating. He moved toward the inner office; then checked as he recognized one of the conversing voices as General Harmon's, the other as Colonel Alt's. It would hardly do to use the Commanding General of the Expedition and his Aide as an information service. Cal took a seat beside the partition to wait for the return of the Liaison Desk officer.

"—Bismuth," Harmon's voice sounded thinly through the partition, "their communications system depends on those thermopiles. We seal off this manufacturing area and they've got to come to us. Then we can make other drops. Here— Hit them here, Zone Five. Zone Three. Around the planet here, in this mountainous section —Zone Eleven. By the way, we'll have to watch that spot for mop-up, toward the end, Hag. It's natural country for a regular hornet's-nest of guerrillas. Put a strong-point outside the mountains under somebody fitted for the work, but don't overload him with men . . ."

Cal dismissed the voices and let his thoughts drift off to the subject of Annie. She would be with the Medics main unit; and that, too, would be locatable through the Liaison Desk. But he would not have time, after finding Contacts Service HQ and telling his story . . .

"—4th Assault Wing, 91st Combat Engineers," Alt was saying. Cal came alert with a jerk, hearing his own outfit mentioned. "A couple of sections, I understand."

"Yes," said Harmon's voice. "But outside of one or two incidents like that, it was a near-perfect drop. Almost too perfect. We've got a fifty-year advantage in weapons on these Paumons, and it's making for too much complacency on our side."

"The men'll stiffen up as they get more action," said Alt.

"No doubt. But will it be soon enough? Soldiers aren't supposed to regard the enemy with good-humored contempt. They're supposed to hate 'em, and have a healthy fear of them—anything else results in a lot of throats being cut the first dark night."

"I'll write up a general order."

"No good, Hag. Half the trouble's with the Progs. They're treating us as if we're half-way civilized and we're treating them as if they were too. Everybody forgets their fighting force outnumbers this Expedition six hundred to one from a mathematical standpoint. One of these days we'll wake up to find we've half-civilized ourselves into being completely surrounded and defeated—" Harmon broke off suddenly. "I've got it."

"Yes?"

"We've got about five hundred prisoners corralled down below

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Headquarters here, haven't we?"

"That's right, General."

"Pick a town behind our front here—say, this place here. What's its Prog name? Manaha. Get a good, stiff man and have him march those prisoners there, wounded and all. . . . You understand, Hag?"

There was a slight pause. Cal suddenly sat bolt upright, listening.

"I think so, sir," came Alt's voice.

"I'm not going to give any orders. Don't you, either. Just pick the right man."

"Yes, sir. I think I know who I can get."

"Handle that march right, and the word'll get out fast enough. It'll stiffen up the Paumons; and the Paumons'll take care of stiffening up our own boys. That's what—"

Quickly and quietly, Cal got up and got out of the dome. He was in the new darkness of early night among the trees surrounding the Headquarters area, headed downhill, before he slowed. The little breeze among the trees felt abruptly cool on his forehead.

He kept going. The business of telling his story of the drop to Contacts HQ would have to wait, now. He stopped abruptly. He had headed off without thinking of direction. He would have to return at least to the edge of the HQ area to get his bearings. But he did not want to come back into the area by Dome Eight. He turned to his left and began to circle around the base of the hill.

A few moments later he came up against a steel fence. He turned and went down along it. A little further on he came out of the trees and saw Paumons standing behind the wire mesh of the fence. These must be the prisoners Harmon had been talking about. They stood silently in little clumps. The sun, Bellatrix, was down, but the western sky was still light. In the dusk, what little light there was glimmered here and there on light patches about the prisoners. The patches were bandages that they had put on the wounded by tearing up their own uniforms that were dark green on the outside and light green on the inside, and the inside was out. They stood silently, but he saw them watching him as he passed. In the dusk their figures were outlines, indistinct. They could have been Lehaunan —or humans. He walked on.

"—*Bunnyrabbit!*" said a voice.

The world rocked suddenly. One quick movement. Then it stopped and everything was just the same as it had been a moment before. Cal found he had stopped dead; and his hands were up at his chest, reaching to a harness he was not wearing, for a weapon that was not there. A great chill flowed over him. He turned sharply around.

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The dim figures were still there. They did not seem to have moved. A single figure was standing closest to him, back a half a dozen steps, just on the other side of the wire. He went back and looked through the mesh at it. It was a Paumon with a large bandage all over one half of his face. It looked as if he had been badly wounded in the cheek and jaw. He saw the light-colored parts of the Paumon's eyes glitter at him in the gloom.

". . . . . ." said the Paumon. Cal had been taught the language. If what the Paumon had said had been understandable, he would have understood it. But it was not understandable. The other's jaw or tongue must have been damaged to the point of producing incomprehensibility. It was a mangled, bawing sound that made no sense. But it was directed at Cal, and there was a feeling behind it that matched the glitter of the eyes. Cal's ears had metamorphosed it when he'd first heard it into something recognizable.

Cal turned and walked off. After a moment, he stopped, turned and went back; but the prisoner who had spoken to him was no longer at the wire. He looked for a moment at the other motionless shapes, then slowly turned and went back up the slope in the darkness.

The outer office of Dome Eight was still empty, for which he was grateful. Harmon and Alt were still talking behind the partition. He walked up to the door in the partition; and knocked.

There was a pause.

"Who's that? Come in!" said Alt. Cal opened the door and stepped a half-step into the inner room. There was a desk at which Harmon was sitting and Alt was standing half-turned toward the door, in front of the desk. There was a further door, and, on the walls, maps and schema.

"Lieutenant Truant, sir," said Cal. "Contacts Service. I thought I'd better speak to the Colonel. It's about the Paumons prisoners."

Alt turned his head and looked at Cal more directly.

"Prisoners?"

"Yes, sir."

"What about the prisoners?"

"I happened to pass the compound where they're being held, sir," said Cal. "And some of them spoke to me. You know they gave us Contacts trainees the language."

"I know that," said Alt. "What about the prisoners?"

"I thought I'd speak to you, Colonel," said Cal. He looked directly into Alt's face. "The prisoners seem to think something's going to be done with them. They're going to be done away with, or something like that. I thought, as part of elementary Contacts, I might have the Colonel's permission to speak to them on his behalf and assure them they've got noth-

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ing to worry about. That they're going to be well treated."

Alt stared at him for a moment. "You did, did you?" he said.

"Yes, sir."

Cal could see Harmon was also looking at him. The general was tilted a little backwards in his chair, and he had been gazing at Cal all this time with no expression on his face except a sort of steady interest.

"Tell me, Lieutenant," said Harmon. "Did you just come in to the outer office, there?"

"Well, yes, sir," said Cal. "I did. There was no one out front, so I took a chance and knocked on your door. I didn't realize you were busy with the Colonel."

"That's quite all right," said Harmon. "Tell me, aren't you the officer I sent over to see General Scoby, back in Denver?"

"That's right, General."

"I thought so," said Harmon. "I've got quite a good memory for certain things." He sat up straight and businesslike. "Well, Colonel, I think the lieutenant here should do what he suggests, don't you? We want to make an early start on good Contacts with the Paumons. Wait outside, will you, Lieutenant? The Colonel will have some more specific orders for you as soon as we're done, here."

Cal went out into the outer office and took a chair well away from the partition. He heard the conversation begin again between Harmon and Alt, but the voices were not so loud now and it was not possible to make out the words. After some few minutes, the officers and men belonging to the outer office began to come in.

"Did you want to see me, Lieutenant?" asked the Captain at the Liaison Desk—a tall young man with blond hair already veeing back at the temples—as he sat down.

"I wanted to locate Contacts HQ," said Cal. "But Colonel Alt asked me to wait on another matter."

"Oh," said the Captain. "Well, Contacts is about three miles west by the Medics, at Grid four five—seven zero. I imagine Colonel Alt will be calling you shortly."

The lights were all turned up in the outer office, now, and the four enlisted men and three officers were all busily at work. Over the noise of their occupation, Cal heard a door close beyond the partition wall. A minute or so later, Alt put his head out of the partition door.

"Truant," he said.

Cal got up and went into the inner office. Alt faced him inside, his legs a little spread apart, his shoulders hunched.

"Lieutenant," Alt said, "We're going to get some orders cut for you. You won't have to go back to your assigned outfit. Those Paumons prisoners you saw are going to have to be walked to a Prisoner

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of War center we're setting up about forty miles from here at a town called Manaha. General Harmon suggested, and I agree, that since P.O.W.s generally are handled as a part of Contacts Service business, you might be the very man to manage moving them there. The General wants them there by tomorrow night. We'll give you four armed enlisted men; and you can move them out at dawn."

CHAPTER EIGHT

Nothing happened in a hurry, of course. Cal's outfit had to be notified, and the Contacts Service HQ; and then his orders had to be printed up. It took several hours and as they were just getting into it, the Liaison Desk Captain —who did not seem to share the popular prejudice against Contacts people—suggested Cal see about food and billeting for the night, and sent him over to Officers Quarters. Cal got himself a bunk and some field rations and coffee. The Duty Officer, a young Lieutenant, came in and sat down and had a cup of coffee with him in the empty messroom.

"We'll roll these Progs up in three months," said the Duty Officer. "They've never been hit like this before. It stuns them, and they just give up. I saw them bringing them in all day today."

The Lieutenant was wearing the shoulder patch of the Administrative Service.

"Yeah," said Cal. "Can I get some more coffee?"

"Urn's over there. Help yourself," said the Lieutenant. "Of course, they're aliens. They can't help it. But it may well be practically a bloodless conquest."

As soon as he had his printed orders, Cal went back down to the compound where the prisoners were, and showed the orders to the Section Leader in charge of guarding them.

"I want to talk to their leaders," said Cal. The Section unlocked the gate and let him in. There was no illumination inside the fence; but they had set up searchlights outside, and the harsh glare of these cast back a sort of bare stage-lighting over the Paumons standing around in little groups inside. Now that it was illuminated, Cal could see the extent of the compound, which was about five hundred feet on the square. The only structures inside it were a sanitation dome, and a small office dome.

"I want to talk to your ranking officer," said Cal in Paumons, to the figures nearest to him. Without waiting for an answer, he went on into the office dome, which had a table and a few chairs, and sat down behind the table.

After a few minutes the door opened and two unwounded Paumons came in and stood before the

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desk. At first glance they looked as alike as all the others did; but Cal, searching hard for differences, saw that the one on the right, facing him, was a little taller and stood straighter. While the one on the left, without any particular identifiable sign of it, gave an impression of greater age. They both wore the piping on their trousers and jacket battle dress that identified them as officers.

"Sit down," said Cal, in Paumons, indicating two chairs he had arranged on the other side of the desk.

"No," said the one on the right. "I am General Commander Wantaki. This is my Aide, Leader Ola Tain."

"All right," said Cal. "I'm the officer who is going to be responsible for moving everybody in this compound to more permanent quarters tomorrow. We will move out at dawn."

"Everyone?" said Wantaki. "A good quarter of the men here are walking wounded, and there are close to seven sixes of men who cannot walk."

"That's why I'm talking to you tonight," said Cal. "It is a very long days march to where we are going—even for your well people. But I have my orders and I must carry them out. I will do what I can; but you must all travel. So I tell you now."

"What good does that do?" said Wantaki, harshly.

"Listen," said his companion, Ola Tain, who had not spoken up until now.

"I suggest you make preparations. Rig litters and assign those who are well to help the walking wounded. I have already arranged to have litter poles and fabric for the litters and for bandages to be given you."

"You show an unusual amount of courage to come in here without at least a sidearm," said Wantaki. "Some of my people—and I do not even exclude myself—might not be able to resist the temptation."

"I belong to a branch of the human army known as the Contacts Service," said Cal. "The Contacts Service never bears arms or joins in the fighting."

"They would be well advised to change their ways in the seasons to come," said Wantaki. "If you supply us with poles and fabric, we will use them. Is that all?"

"That is all," said Cal. They went out. He himself went out and returned to the gate. The Section Leader of the Guard let him out.

"I've made arrangements with Quartermaster to have some litter materials and stuff delivered to the prisoners," Cal told him. "Let it through to them when it comes."

He went back to Officers Quarters and turned in to his assigned bunk. He went off to sleep immediately; but several hours later he was awakened by the Duty Officer.

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"What's up?" said Cal thickly. Ugly dark half-remembered shapes were still thronging the back of his brain.

"You were yelling," said the Duty Officer. "Some kind of a nightmare or something—about rabbits."

In the pale light of predawn, near the fence, Cal could see the four armed men he had been given to control the five hundred odd prisoners on the march. He imagined Alt had personally selected them. Two were youngsters—one with his hair cropped to a stubble and a thin, wide, sharp-looking mouth in a thin face, the other small and large-eyed. One was of the same type and age as Mahauni, the mule-brain who had taken over command of the outfit under the torps. These were all buck soldiers. There was a noncom, too, a squadman. He was lanky, black-haired, and tall. He did not call the men to attention as Cal came up, but stayed lounging against the fence above the other three seated on the grass. they were all wearing full harness and weapons.

"You the prisoner guard?" said Cal as he came up.

"That's us," drawled the noncom, not moving, glancing at Cal's Contacts Service patch.

"What's your name?" Cal asked.

"My friends call me Buck," said the Squadman. Cal waited. "Allen," said the Squadman.

"All right, Allen," said Cal, in the same tone of voice. "You report back to your outfit and tell them to send me somebody else. Tell them you impressed me as being sloppy, unreliable and insubordinate; and that I said I couldn't use you."

Allen straightened up with a jerk.

"Hey, wait a minute—" he began, but Cal was turning to the other three.

"On your feet," he said. They scrambled up. Behind him, Cal heard the Squadman talking.

"—senior man of the Combat Services gives the orders in the field. You don't tell me—"

Cal looked around.

"I thought I gave you an order," he said.

"Listen, Lieutenant, I—"

"Get in there," said Cal, turning back to the three others. "Start counting the prisoners; and see that all the wounded who can't walk have litters." They went off.

Cal watched them go down the fence, in through the gate and out of earshot. The Squadman was still talking. He stopped when he saw Cal's face turn back to him.

"Listen," said Cal, holding his voice down. He could feel his arms beginning to shake from the tensed muscles in them. "Listen, soldier. Get one thing clear in that head of yours. You're here to do what I tell you, and exactly what I tell you in getting these prisoners to Manaha. You can just forget

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anything else. Never mind rule books or the kind of Contacts Officers you maybe ran into in the past. Just remember that on the official papers its just you and me, all alone on this trip. And if you think your two stripes can play games with these—" Cal jabbed a rod-stiff finger at his Lieutenant's tabs—"just you try it. And I'll hang your hind end, boy. Remember that. No matter what happens to me, when the dust settles you're going to find yourself in front of a long table with five officers of the rank of major or above behind it."

Cal quit talking. He was shaking all over now, and he knew Allen could see it, and he did not give a damn.

"Well?" he said. Allen was not moving. He stood stiff and stared straight ahead, and his face was pale. "All right," said Cal, almost in a whisper. "I'm going to take you along; and you're going to see that you and those other three do the job they're supposed to do. Now, get in there and get them organized."

Allen turned and went. Cal watched him go; and gradually the case of shakes he had picked up began to leak out of him.

They actually got the Paumons prisoners moving by half an hour after sunrise—which was even better than Cal had hoped. He had figured it would take a full hour to get the march actually on the road. What helped was the authority of Wantaki and Ola Tain. They had taken over internal command of the prisoners, and Cal wisely let them be.

He and his four soldiers wore jump belts; and he had a man pogo-sticking along on each side of the column, one at the rear and Allen up front. He himself jumped back and forth from tail to rear of the marching column.

It was a good weather day—there was that much in its favor. They were in the southern latitudes of the northern hemisphere and high up. The air was dry. To begin with, the column made nearly three miles an hour; but that could not last, Cal thought. He moved back and forth along one side of the column, then in the opposite direction along the other. The Paumons prisoners marched steadily, in a rough column of fours, two whole individuals on each side of a wounded, two carriers, frequently changed, on each litter. Their eyebrowless, dish-shaped faces seemed to show no expression. They talked little among themselves. He found himself getting curious about them.

There was an atmosphere of numbness about them—a leaden quality. They marched like people in a dream, or occupied with some dreary, routine task. Only up at the head of the column were exceptions to this to be found. There, Wantaki strode with heavy,

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jarring footfalls, staring straight ahead like a thwarted wrestler; and beside him Ola Tain paced soberly, but apparently calmly.

Now that Cal had time to study the two leaders, he found himself puzzled by Ola Tain. Wantaki he could understand to a certain extent—the Paumons Commander had the ring of the military about him. But Ola Tain did not seem to belong at all. He was almost like a religious representative of some sort.

They had been stopping at Cal's order ten minutes out of every hour. They also stopped at noon. Nobody had known anything about rations for the prisoners, or even what the Paumons ate, when Cal had asked about it back at HQ before leaving, so the column was without food. They did not complain about it, but sat quietly in the brilliant, high-altitude sunlight—small, bright Bellatrix was like a white coin in the sky. Glanced at for just a fraction of a second, it left a black afterimage burning against the closed eyelid, floating about with the hidden movements of the eyeballs.

When the order came to move on, they took up their march again. But they were definitely slowing. It was the wounded who were holding the rest back. They went through several small towns, but the white, square buildings on either side of the narrow, winding streets were locked up tight and no Paumons civilians showed themselves. By mid-afternoon, Cal was forced to call another halt and the prisoners, particularly the litter-bearers, went down where they stood as if they had been so much grain cut by a scythe.

Cal sat on a little rise of ground at the side of the road and let them lie. After about twenty minutes, Allen came up to him.

"How long we going to leave them here, Lieutenant?" the squadman asked. Cal looked up at the man without answering, and Allen wet his lips and went away.

It occurred to Cal that he had no idea how much endurance the Paumons might have. It might be less, or more, than humans in the same position. He got up and went up to the head of the column. Wantaki was there, sitting on a roadside boulder, looking back over the column of down men. One muddy rust-colored hand was on his knee curled up into a fist, and his face was as hard and washed clean of expression as a stone seen under running water in a mountain stream fed by glaciers. He sat alone. Ola Tain was a little ways off, also alone, lying on a hillside. Cal went toward him.

They had come to a wide open area of the plateau now, with only an occasional clump of the cottonwood-like trees. In between the heaved-up rock, in the stony soil, the green moss was everywhere.

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There was a faint, sweet odor to it, like lavender.

The moss deadened the sound of Cal's footsteps, and evidently Ola Tain did not hear him approaching. The Paumons Aide was lying on one elbow, the forefinger of the hand belonging to that elbow tracing out the small, feathery stems of the moss-plant directly underneath it. His face was absorbed. Cal's steps slowed as he watched the other. For the first time now Cal saw that there were tiny yellow blossoms hidden among the cone-shaped leaves of each miniature stem, and Ola Tain's finger was counting these.

Cal felt a constriction in his guts and his throat tightened. There came to him suddenly a strong and desperate longing to know what sort of feelings moved inside the alien soldier, just a few feet from him—a sort of terrible loneliness. He opened his mouth to speak, but all that happened was that he made a sound in his throat. Ola Tain looked up.

"I need some information," said Cal, in Paumons. "I did not think now would be a good time to ask the General Commander."

Ola Tain's glance slid past Cal to Wantaki, and back to Cal again.

"No," he said.

"I want to know," said Cal, "how your people are standing up to the march? We have still over half the distance to go."

"You see," said Ola Tain, nodding toward the column. "Can you tell us what our destination is?"

"Manaha. I have no means to take care of stragglers."

"I had noticed that." Ola Tain looked at him for a moment. "You are doing the best you can for us within your orders?"

"Yes."

"I had thought so, myself. I will help as I can."

"If we take until tomorrow dawn, will all make it?"

"We will pray so."

Cal lingered, looking down at him.

"You pray?" he said.

"Sometimes," said Ola Tain. "I am praying to-day."

"What to?"

"Does it matter?" said Ola Tain.

"I guess not." Cal looked back over the column then down to Ola Tain, again. "You're a strange sort of soldier."

"I am not really a soldier. I teach—" the term he gave did not translate well. Something between philosophy and anthropology in the Paumons sense.

"*He* is a soldier," Cal nodded toward Wantaki. "He hates us, doesn't he?"

"Yes," said Ola Tain.

"Do you hate us?"

"I try not to. Hate gets in the way of clear thinking. But—" Ola Tain hesitated. "Yes, I hate you, too. He looked back down at the flowers of the moss.

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"Well," said Cal, after a second, "we're only ensuring the safety of our bases and our people."

"Please." Ola Tain did not look up. "Do not make it harder for me to try not to hate you."

Cal went back to the column, and to Squadman Allen.

"Get 'em moving," he said.

With the declining of the sun, the air cooled quickly. At first this seemed to have a good effect on the prisoners and revived the column, but as Bellatrix sought the horizon, what had been merely a pleasant coolness began to approach a chilliness. With the long night ahead of him, Cal faced the fact that the only way to keep the most of his prisoners moving was to get some food and drink into them.

He took Ola Tain and went ahead up to the next town. Together and alone, they came on the small place by surprise. There were lights in the windows and female Paumons and children moving about the streets. They stared for a moment at the sight of Cal, then scattered to their buildings. Ola Tain left him and went on into the heart of the town, alone.

He was some little time getting back. When he returned, he was followed by a female driving a native, civilian balloon-tired transport carrying food and drink of the Paumons variety.

"Well, you got it," said Cal to Ola Tain, as they headed back toward the column with the truck going ahead.

"With your people attacking, they did not want to spare it," said Ola Tain, looking ahead to the truck. "It is not easy." After a moment, he said. "I had to threaten them with you."

They got back to the column, which had built fires. After the prisoners had eaten, they appeared stronger. But at the next halt, Allen came up to Cal.

"There's five of them dead," he said. "They've been carrying them all this time in the litters so we'd think they were wounded."

"If they can keep up, let them, said Cal.

But during the long night, the column began to straggle. Cal ordered the dead left behind—and in the process found that there were now twelve corpses in the column. They left them behind and went on, the exhausted, four to a litter now, carrying the near-dead, the staggering wounded helping each other. Cal increased his halts to one every half hour.

Dawn found them straggling through another small town. Word of their movement had gone ahead of them over the civilian Paumons communications system, which was still operating; and, with Manaha, their destination, only a little over two miles off, the civilians had grown bolder and

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more in sympathy with the prisoners. They said nothing, but they peered from windows and rooftops, and dodged up side streets out of the way, as the column reeled forward.

As they emerged from the last village before Manaha, they found the road ahead lined with the old, the female and the young. They moved back from the road as Allen, leading the column, came toward them, but they waved in again toward the plodding prisoners as he passed. Looking ahead now, along the semi-open country ahead, Cal could see the distant glint of sun on windows that would be Manaha. He looked back at the reeling column, and at the civilian Paumons, leaning in toward it as if over some invisible barrier rope. Wantaki and Ola Tain still moved ahead of the rest.

There was a slight bend in the road, and, as Allen reached it, the crowd of Paumons children there shrank back. But as he passed on, they bulged forward, there was a sudden flurry in their ranks, and a small, male youngster darted toward Ola Tain, who was closest.

The thin young soldier with the wide mouth snapped up his machine pistol.

"Hold it!" shouted Cal—and the youngster darted back again into the safety of the crowd, leaving Ola Tain holding a green and leafy branch from one of the cottonwood-type trees. For a long moment Ola Tain looked at it in his hands, and then, holding it upright before him, took up the march again.

A moment later, another child, a little older this time, darted out with a branch for Wantaki.

Soon, branches were being delivered to prisoners, all along the column. Allen came back to Cal.

"Sir?" he said, looking at Cal.

"Leave them alone," said Cal, harshly.

Allen went back to the head of the column. Soon, all the prisoners had branches; and they carried each his own upright before him, their shoulders straightened, and stepping out. As they came into Manaha at last, they looked like a forest on the move; and they were marching like soldiers.

CHAPTER NINE

Cal rejoined his outfit after that, and for the next six months he worked with Battalion as Interpreter and questioning prisoners. The Expedition made large advances, conquering most of the planet. It went as Harmon had predicted. The Paumons were forced to come to the Expedition on the plateau, and the Expedition made large-scale drops of fighting forces elsewhere around the world.

But it was not a bloodless conquest. It took the Paumons some time to learn not to fight head-on

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battles against the vastly superior equipment of the Expedition, and whenever they did they suffered heartbreaking losses. The Expedition also suffered losses. At the end of six months they had received three contingents of replacements for the Combat Services, and their casualties were over seventy-five thousand. Estimates of the Paumons casualties put those at over two million dead and wounded. Cal was promoted twice, to first Lieutenant and then to Captain, and brought back to take charge of the big new Prisoner-of-War center next to Expedition Headquarters and Expedition Main Hospital, at Manaha. This gave him a chance to be with Annie, who was stationed at Main Hospital. He heard occasionally of Walk, who was making a name for himself as commander of a newly formed guerrilla-hunting group. Promotions had been faster in the Combat Services, and Walk had made major.

One day Annie called Cal from over at Hospital Receiving to say they had just brought Walk in with multiple wounds of the arm and leg from a Paumons mortar. Cal juggled his schedule for the day and went over to the hospital. He found Walk had already been put into a room by himself. In the anteroom outside were Annie, who was charting the readings of the preliminary check-over the Medical Officer had given Walk, and a Public Relations Officer from Administrative, who was there to write Walk up for news release back on Earth.

"Can I go in and see him?" Cal asked Annie.

"In a minute," she said, coding up results of the checkover with her fingers hopping over the machine keys. "I'll take you in. I asked to be his nurse."

"Are you a buddy of his?" asked the PR officer—a neat First Lieutenant with a mustache. "The officers and men of his outfit idolize him, I hear. And to the Paumons he's almost a legend they tell to frighten their children into being good. Maybe we can get some pictures of the two of you together. His story is one long string of heroic exploits after another. They say even the aliens respect him."

"—You can come in now," said Annie to Cal. They went in together. Walk was lying in a hospital bed, under a light top sheet only. He was so tanned and thin he looked like a sun-blackened corpse against the white sheets. His eyes focused crazily on Cal.

"Cal . . . ?" he muttered. "What're you doing here? . . . Get out. Get back to base. . . ."

"He's out of his head," said Annie. She folded Walk's arm up and put a hypodermic syringe gun against the side of it. After a moment his eyes began to clear. He recognized Cal sensibly, and his lips twisted in a hard line.

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"Captain Truant," he said.

"How're you feeling?" asked Cal.

"Like a million," said Walk. "Just like a million." He made an effort to pull himself up on his pillow. "Nurse—" He recognized Annie. "Annie, they got any liquor around here for the casualties?"

"I'm sorry," said Annie, "but they've got to do some operating on you."

"—— them," said Walk. His tongue was beginning to thicken. Annie had evidently given him some fast-acting sedation. "—— you, too. All of you. —— the universe. Tha sall iss goo for . . ."

His eyes closed and he passed out. Annie put a gentle hand on Cal's arm.

"That's all right," said Cal. "It doesn't matter. I was figuring he'd be like this."

He went back to his office at the POW compound. There was a message that General Scoby wanted to see him; but Ola Tain had been waiting in his outer office for half an hour. In the large Manaha POW Center that now held over eighty thousand Paumons, Ola Tain was Cal's most valuable connection. It was as Scoby had implied in his talk with Cal after Cal had graduated from Contacts School, back in Denver. There were no rules for building a basis for coexistence with those you had conquered. You could only feel your way.

Cal felt it mainly through Ola Tain. Wantaki had escaped early. He and five of his officers had broken out and got clean away the second week of their internment at Manaha. Cal was convinced that Ola Tain could have gone at that time, also, if he had wanted to. But he had chosen to stay and speak for the other prisoners. The other prisoners seemed to respect him, but not absorb him. It was as if he was alien to them, too. Cal had asked him once if he was never lonely.

"No," Ola Tain had said. "One can only be lonely within walls, and I have never built any."

—Now, Cal stopped in the outer office to explain that he would have to get over and see Scoby.

"There's no hurry about my business," said Ola Tain. "I have only promised to ask again that the recreation area be enlarged."

"I'll ask General Scoby about it," said Cal.

He went on over to Contacts Service HQ. Scoby, busy at his desk as Cal came in, looked as if he, his office, and Limpari the cheeta, had been transported all in a package from Denver, without even disturbing the papers piled on the desktop. Cal repeated Ola Tain's request.

"No," replied Scoby. He leaned back in his chair and stared at Cal,

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seated opposite him. "They don't really want more space. They just want to find out if the rumor's true."

"What rumor?"

"That if peace is signed next month, they'll all be released."

"I hadn't heard that."

"It's circulating," said Scoby. "What do you think we ought to do about it?"

"Do?" said Cal.

"That's what I said."

"Nothing. The whole thing's crazy. In the first place we're a lot more than a month from signing peace, anyway. Wantaki's still back in those mountains of Zone Eleven with better than thirty thousand men."

"Thirty thousand isn't much," said Scoby with one of his sudden spasms of mildness. "They can be ignored. The main civilian Paumons representatives are ready to ignore him and sign."

"You mean they'd leave him in the position of an outlaw—the Commander that fought harder for them than anyone else? Him and thirty-thousand Paumons men—to say nothing of all the other guerrilla groups around the world?"

"They're a lot like us," said Scoby. "Or hadn't you noticed?"

"I noticed," said Cal, bitterly.

Scoby gazed at him for a moment.

"Trouble with you, Cal," he said, "is you're still expecting miracles from people—and I mean people of all sorts, Lehaunan, Griella, Paumons, as well as human. That's the trouble with most of us. We quit expecting the worst from people, so right away we've got to swing over and start expecting nothing but the best."

"If the General will forgive me," said Cal, "I'll try to do better next time."

"And don't get sarcastic. You've learned a lot this last year but I still know a few things more than you do. One of them is how particularly important this particular race is, to us. Or can you tell me that, too?"

Cal thought a moment.

"No," he said, finally, "I can't."

"They're important just because they are so damn much like us," said Scoby. "Long as the races we were knocking over were covered with fur, or had prehensile noses, we could go on calling them Pelties or Anteaters and shut our eyes to the fact they had about as much brains, or probably about as much soul as we had. But an alien we got to cal 'Prog,' now—that's getting a little like 'Gook' or 'Nigger.' You're straining to point up a difference. And yet it stood to reason all along, if we were going to bump into other thinking races out among the stars, sooner or later one of them was bound to be pretty human."

He stopped. He looked at Cal for a reaction.

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"I guess you're right," said Cal.

"Of course," said Scoby, "I'm using the word 'human' in only its finest sense."

"I guessed you were," said Cal. "So being like us is what makes the Paumons so important?"

"That's right," said Scoby. "What would you do if you were a Paumons and this was Earth, and you had eighty thousand Humies out behind that wire when peace was signed? Would you want to turn them loose?"

Cal straightened up in his chair.

"Hell, no!" he said. "I see what you mean."

"Not unless you wanted to start the conquest all over again—that right?" said Scoby. "How far would you say these people are from being reeducated into living side by side with us?"

"Twenty years," said Cal. "Do something with the next generation maybe."

"Don't kid yourself. Five generations'll have a hard time wiping out the fact we started things out by coming in and trompling them."

"Can you talk General Harmon out of releasing them?"

"No."

"Then we're helpless," said Cal. "We're just giving them back an army. This and the other POW camps—they'll have three quarters of a million men under arms again in half a year. And we can't do a thing."

"Not quite," said Scoby. "Once peace is signed, Contacts Service Head can interdict any step taken by Combat Services Commander—if Contacts Head thinks it'll lead to a breach of the peace."

"Ouch," said Cal. "But you wouldn't want to do that to Harmon?"

"No. But then I won't have to," said Scoby. "You will."

Cal sat up straighter, suddenly. He stared at Scoby, but Scoby was not smiling.

"Me?" Cal said.

"I told you I'd been grooming you," said Scoby. "I've got men here who've been with me sixteen years. But you've got the Combat experience; and you've got the guts. You've got something else, too."

"But me—" said Cal, and stopped.

"Every Expedition, the mulebrains in the field talk about how they should all hang together and go back as a unit to straighten out the ex-mulies in Government. The man on the spot always thinks he knows best. Rubs Government the wrong way. It's happening now. Politics, boy. Now's the time for me to get things from Government. I've got to go back to Earth and fight for our team."

"I'm not sure I can do that," said Cal, slowly.

"I'm sure for you," said Scoby. "I'm having orders cut now, giving you a double jump to Lieuten-

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ant Colonel. You'll have as much authority here as I would—though not the reputation to back it up. That you've got to make yourself." Scoby grinned. "Be happy, boy. You're going up in the world."

CHAPTER TEN

Cal saw Scoby off from the Headquarters field just outside Manaha. The field had been leveled and poured only six months before, but the green moss could grow anywhere, and where it was not burnt away daily by the ascending ships it had flung long arms across the concrete. It was destroyed by a puff of heat, the touch of a human foot—but it grew again overnight. Standing with Scoby, waiting for boarding orders to be announced on the slim, small courier ship that would take the older man home, Cal could see, less than forty yards away, the great tower of the Expedition's Flagship, black against the morning sky. It had not moved since landing on this spot, eleven days, local time, after the first drops in which Cal had come down with Wajeck and the others. It carried a sheathed sword of nuclear explosives in its belly that could potentially devastate the world it stood on for half a thousand miles in every direction from where it stood. It could wound a planet, and from four hundred and twenty-six feet above Cal and Scoby, in the observation room, the single caretaker soldier aboard it could be looking down on them all. From the main screen he could be seeing the lesser ships below him, and the field, and Manaha, with all the main strength of the Expedition laid out like a toy scale model below. But even on this lord of space and war, the moss at its base was already beginning to lay its tender, green relentless finger.

The hooter sounded, announcing boarding orders.

"Hold hard, Cal," said Scoby, one fist clutching the handle of Limpari's harness. He put his hand out blindly, and Cal took it. In the last moment one of Scoby's blackouts had taken him and he could not see. They shook. "Now, girl —" he muttered to Limpari, and smoothly and powerfully, she led him away from Cal and on to the ship.

Cal went back to Contacts HQ, and a work day that in the several months following stretched to better than fourteen hours as a routine matter. He had little time even to see Annie. He had come to depend on her heavily; but when she suggested that they might get married—he himself had never mentioned it—the violence of his reaction startled even him.

. . *"No!"* he had shouted at her.

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"Not now! Can't you see that? *Not now!*"

He had turned and flung himself three angry strides away from her, from the hospital desk where she was sitting on duty, at the moment she had mentioned it. Down the hall, an ambulatory patient had turned, surprised, to stare. Ashamed suddenly, he came back to the desk. "Not now. Now's not the time, Annie. Can't you see that?"

She did not press him.

The peace was signed. Wantaki was now an outlaw in Zone Eleven, with now nearly twenty thousand Paumons. Walk, recovered, was also back in Zone Eleven, harrying the Paumons leader from a series of strong posts encircling the base of the mountains. Harmon signed the order releasing all Paumons prisoners of war, and Cal stood at his office window that day, and watched as the waves of prisoners celebrating their release literally tore the gates from their hinges and ripped half the compound to shreds along with it. For a day and a night riot threatened in and around Manaha, and three mechanized battalions were ordered in to patrol the area. Subdued, the Paumons ex-prisoners melted away to their own home area. Five days later, Cal looked out at the torn and empty shells of the buildings in the compound as rain began to fall.

The initial drops of the Expedition had been timed to come at the earliest possible date after the winter season on this plateau. Now a new winter season—at a time of rain—was upon the high, arid country. Day in and day out, the grey curtains of the rain obscured the landscape as Cal went back and forth between Contacts HQ, Expedition HQ, the Medical Center, and his own quarters.

For two months the rainy season continued. Meanwhile, elsewhere about the planet, the yeast of the returned Paumons fighting men was beginning to ferment. The Paumons civilian authorities made apparently honest attempts to comply with the plan for reorganization and reeducation of their people. But the whole population now was beginning to quake and gasp from unexpected fumaroles, like cooking oatmeal before it comes to an active boil. The Paumons people were torn, divided, and violent. On the one hand there were outlaw resistance groups even in the large cities, hunted by human soldiery and their own police as well. On the other hand, in Zone Eleven, Walk commanded one whole fighting unit made up only of Paumons enlistees and ex-soldiers. Ugly stories began to emerge from Zone Eleven, and from the activities of resistance groups elsewhere. Prisoners were not taken so often, and those who were taken were liable to turn up later as corpses.

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Cal, trapped in a snarl of paper work and tripped up on every hand by inefficiency or petty resentment on the part of Contacts officers over whose head Scoby had promoted him, saw a crisis approaching. He messaged Scoby back on Earth, saying that the greater authority of the older man was badly needed with the Expedition. Scoby sent back word that he could not possibly come before six weeks. Talk to Harmon, he advised. Cal made an attempt to do so, but his appointments with the Commander of the Expedition had a way of being cancelled at the last moment. Harmon messaged that he would have his office set up a time for a talk with Cal at the first opportunity. Time slipped by.

The six weeks came and went. Harmon remained uncommunicative. Scoby had not come, or sent word he was coming. Cal, working alone in his office one early evening—he understood better now why Scoby's desk had always been loaded with papers—at endless reports and explanations of reports, heard the single snap of a fire rifle close under his window. And then two more snaps.

There was a commotion in his outer office. His door burst open, and a Paumons that he suddenly recognized as Ola Tain half-fell inside. There was a babble of voices beyond in the outer office as Cal jumped up and helped the other into a chair. Ola Tain was burnt clear through the body twice. He could not live. The office door banged open again, and Cal, looking up, saw a hard-faced and shoulder-scorched man in the entrance whom he did not recognize—and then with a sudden shock, did recognize. He now looked more than a little like Walk, but he was Washun, the Contacts Cadet who had shared Cal's second tour of Basic at Camp Cota. The Contacts shoulder patch on his jacket now was stained and ancient.

"It's Blye, in Zone Eleven," said Washun. "He's planning a massacre."

CHAPTER ELEVEN

The two-man atmosphere ship fled westward at forty thousand feet. It caught up with the retreating sunset, passed it and came down half a world away in late afternoon at Garrison Number Three of Zone Eleven—Walk's Headquarters.

The garrison was drained of men. The senior man was a noncom, a Wing Section. It was Tack. He and Cal looked at each other like close relatives that have been separated for years at far distances from each other and grown into different customs, as Cal questioned him.

"He left six hours since," said Tack. "He took twenty-eight hundred men and all equipment back in the hills. To that place they call

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the Valley of the Three Towns. . . . How did you know?"

"A Paumons named Ola Tain," said Cal. "—Wantaki knows about Walk's plan. Was he crazy? He could be court-martialed for this!"

"He *is* crazy," said Tack, lowering his voice, and glancing at Washun, who had made the trip with Cal, and now stood at the long end of the Headquarters office, out of earshot. "He doesn't care—about anything. And he's always drunk, now. But you say Wantaki's laying for him?"

"Yes," said Cal. His body felt heavy and tired and old. "Tain came to your own Contacts man in this area—" he gestured at Washun—"to try and stop the whole thing. But your tame Paumons caught him and shot him up. Washun rescued him and got him to me. But he couldn't even talk by that time." Cal felt bitter inside. "He was shot again outside my office. Some fool."

"Can you get to Walk in time?"

"Give me a combat ground car. I'll try."

The sunset caught up with Cal once more; as he shoved the little ground car, alone, along an unpaved roadway back into the jagged, tree-covered young mountains of Zone Eleven. In the darkness, the trees looked even more like Earthly trees, the dirt road like some back-country trail as they still existed in the parks or wilderness areas back home. The combat car, floating a few inches above the pounded dirt of the road on the soft, shusshing noise of its jets, seemed pouring itself into the quickly falling darkness. And there came on Cal suddenly one of those seconds of strange emotion he used to call 'inside-out moments' when he was a boy. He saw himself suddenly as if from the little distance from a different viewpoint outside himself, and what he saw had a strange, sadly comical lack of sense.

What was he doing here in this heavy, adult body? In a complicated vehicle, on this strange world, upon this alien soil? To what dangerous explosion of things were the iron bars of events controlling him? He was bound to save some lives, to avert some kind of disaster, but was that really the purpose, was that really the meaning . . . ? And then, the road curved suddenly, and his own automatic hands, jerking the combat car into a turn, brought him out of it.

Night had completely fallen.

Through the darkness, with only the glimmer of lights, he followed the road. He went up over a little rise and saw abruptly down into a valley where lights glowed and clustered about three main points. He swooped down upon it, but as he entered the first of these, he found the lights came from the broken windows of damaged

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homes. There was rubble in the streets, but no movement of living beings. When he stopped in the little open space at the center of the town area where he was, dark bodies moved in around his car.

He got out. They were all Paumons laden with weapons.

"Come," said one of them. Cal followed. They walked across the open space and Cal's guide stood aside at a door to a low building. Cal pushed open the door and stepped inside. He found himself in a low-roofed room with a dirt floor. There was a wooden table, two cots, some plain chairs, and several heavy, square wooden timbers holding up the roof. Wantaki stood beside the table, and between two of the pillars, slumped, with only the cords about his wrists holding him upright, and his shirt torn off, was Walk.

"Ola Tain?" said Wantaki. Cal, who had started to go to Walk, stopped. He had thought Walk unconscious when he first stepped in, but he saw now that Walk's eyes were open and watching. His body showed a bad wound low on the left side.

"Dead," said Cal. "He died, reaching me."

"Yes," said Wantaki. He did not say anything more for a moment. "I would have saved him, but—that is the way it goes for people like him."

Cal came up to the table. Wantaki looked squarely at him.

"I have no good word to say for such as you," said Wantaki. "People like you are——" The Paumons expression he used was untranslatable. "With him—" he used the verb form that made it clear he was referring to Walk, the only other person in the room —"it is different. He is as good as a man any day. If you had been all like that, you might even have eaten us up the way you have tried to. But you were not. I would not even have him tied up like that, but many of my soldiers hate him."

He waited. Cal waited also, saying nothing.

"I am a military man," said Wantaki. "This is the beginning. For a while your weapons gave you an advantage, but we have stolen some of them and made more. Today was the beginning. We are going to rise all over the world. We will wipe out your Expedition. And then—we will go hunting you in your own home planet."

"No," said Cal. "Any uprising will fail. The Expedition has weapons it has not used."

"I do not believe you," said Wantaki. He stared at Cal for a long moment. "Besides it does not matter. Weapons can eventually be duplicated. If we fail this time, we will not fail next. The Paumons spirit will never endure to be a tame beast; and right is on our side."

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"That can only end in a stalemate," said Cal.

"How can it end in a stalemate when we are superior to you?" said Wantaki. "Given equal weapons, our spirit will conquer. . . . I do not know why I talk to you."

"I do," said Cal. "You're thinking of all the Paumons that must die before you win your victory." He stepped to the edge of the table. "If the humans would negotiate with you, face to face, as equals—not as conquerors talking to conquered—would you hold off your rising?"

Wantaki said nothing.

"If you could walk into Expedition Headquarters with sufficient force to feel safe, and there talk—would you?"

"You cannot do this," said Wantaki.

"I can. Give me three days." Cal looked over at Walk. "And him."

"He is dying."

"Still."

Wantaki stepped away from the table and then stepped back again.

"I have a responsibility to save lives, as you say," he said. "I don't believe you—but it's a bargain." He went to the door. "When you are ready to go, you may go."

He went out. Cal turned quickly to Walk and untied the rope on one side. Walk came heavily down into his arms. Holding him, Cal got the other rope untied and laid Walk on one of the cots. Walk's eyelids fluttered and he looked up into Cal's face.

Walk's lips moved. He did not seem to be doing anything, and then Cal realized he was whispering. Cal bent his ear down close to the lips.

". . . Cal," Walk was whispering. ". . . lucky . . . lucky, got out . . . in . . . time."

"You're going to be all right," said Cal. Then he realized from the shadow of a look on Walk's face that he had misunderstood. It was not the present moment Walk was talking about.

". . . Lies," whispered Walk. ". . . trumpets . . . drums. Liars . . ."

"Lie quiet," said Cal. "Rest a bit. Then I'm taking you east to the Hospital."

Walk sighed, and closed his eyes and lay still. Cal sat quietly beside him for perhaps half an hour. Then he realized Walk had opened his eyes and was looking at him, again.

"What?" said Cal. He bent down to hear. Walk's faint breath tickled his ear.

"Annie . . ." whispered Walk. ". . . hates me?"

"No," said Cal. "Hell, no! Annie likes you. We both like you a lot. So does Tack. So does everybody."

"Good . . ." Walk whispered, ". . . know . . . somebody. You . . . never . . . hated m . . . ?"

"Hell, no!"

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"Promised me . . . good . . . feeling. Noble . . . Liars. Feel . . . lousy . . . dying. Nothing but . . . damnservice . . ."

"Hey, boy," said Cal. His throat hurt. He reached out and took hold of Walk's hand. "You got nothing but family. Annie, and me and everybody. What're you talking about?"

"——" whispered Walk. "—— . . . Lousy. Knew . . . liars, long . . . time ago. Didn't . . . get out . . . time." He closed his eyes once more and lay still.

Cal continued to sit. About an hour later, Walk spoke once more.

". . . Don't . . . mind . . . being killed," Cal was barely able to make out with his ear right at the pale lips. "Just . . . don't . . . want . . . to die . . ."

A little while later, when Cal lifted an eyelid, the eye beneath stared straight and unmoving. And fixed.

CHAPTER TWELVE

Cal brought the body of Walk into Hospital Receiving, back at the Hospital at Expedition Headquarters.

"But the man's dead, Colonel!" said the First Lieutenant in Receiving. "What do you want us to do with him?"

"Bury him," said Cal. He went in search of Annie.

"I'm going to see Harmon," He said. "I want you to get off duty here, now, and do something for me. Can you do that?"

"Yes," she said. "What is it, Cal?"

"Get a ground car and follow me over. Wait until I go in to Headquarters, then park it around by the side entrance to the Files office. Leave the motor running and clear out. Can you do that?"

"Yes, Cal, but—"

"I'm not telling you any more," said Cal. "If you have to ask questions, don't do it."

"All right," she said. "Give me a minute to get somebody up here to take over the ward desk."

Cal drove a ground car of his own to Expedition HQ. In the scope he could see Annie's car following. He pulled into the official parking lot, and went in.

"—Colonel?" said the Wing Section behind the small wooden fence that separated staff from visitors in the outer office.

"Contacts Service," said Cal. "Colonel Truant. I'm to talk to General Harmon." And without waiting for an answer, he pushed open the small gate in the fence and strode past.

"But Colonel—just a minute —*Colonel!*"

He heard steps behind him but kept going. He passed through another door into another, smaller office, where a Captain looked up, startled, from a wide desk.

"Colonel Truant!" said Cal. He

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kept travelling. The farther door in this second office was closed. He opened it and stepped through.

Harmon and Colonel Alt were standing together by a desk, within.

They both turned as the Captain from the outer office and other staff members reached the door behind Cal.

"General," said Cal. "I think it's time for your talk with the Contacts Services."

"I'm sorry, sir," said the Captain, from behind Cal's shoulder. "He just walked by—"

"That's all right," said Harmon. "Close the door." Cal heard them leave and the door close behind him.

"Alone," said Cal.

Colonel Haga Alt came around the desk, walking on his toes like a boxer.

"Truant," he said, "I've waited one hell of a long time for—"

"Hag," said Harmon. Alt stopped. He looked back at Harmon. "It's all right, Hag," said Harmon, gently. "You can leave us."

Alt's nostrils spread. "All right, sir," he said. He walked on, looking squarely into Cal's face, passed Cal and Cal heard the door shut a second time behind him.

"All right, Truant," said Harmon, in the same gentle voice, "What is it?"

"The Paumons are rising."

"I know," said Harmon.

"I know you know," said Cal. "I know you planned it this way. There was a time when I thought you just didn't know any better. But I found out different."

Harmon walked around the desk himself and stood in front of it. They were only a few feet apart. Harmon put his hands together behind him, like a lecturer.

"Back in Denver," he said, "I sent you to General Scoby because I was under the impression that—whatever had happened to you with the Lehaunan—you were a soldier."

"I was," said Cal. "I was one of the prettiest."

"But you aren't any more?"

"Yes," said Cal. "I'm a soldier. I'm a hell of a soldier—but maybe you wouldn't recognize the kind I am."

"No," Harmon said. "You're wrong. I would recognize what kind you are. In fact, I do. That's why I'm talking to you, instead of having you thrown out." He sat down on the edge of the desk. "You're the best kind, Cal. That's why I sent you over to Scoby in the first place. Because you're the kind that has to fight out of a sense of conviction, and men like that are too valuable to lose."

"Only, I'm wrong."

"Yes," said Harmon. "You got in among people like General Scoby who talk about fine things like peace, and understanding and no more wars, and it impressed

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you. I think you may have forgotten that those things don't come about naturally. They have to be imposed by a strong hand from the outside." He looked at Cal, and his voice was almost pleading. "I want you to understand. Damn it, you're the sort of man who *ought* to understand."

"I should, should I?" said Cal.

"Yes. Because you've seen both sides of it. You're not like these half-baked glory-preachers that think we're going to have Heaven next Tuesday. I tell you, Cal, I've got more use for a Prog like Wantaki than I have for these Societics-Contacts choirboys."

"It's mutual, no doubt," said Cal, "you're both generals."

Harmon frowned at him.

"Something in particular seems to be eating on you?" he said.

"Major Blye's dead—you know, Zone Eleven? I brought his body back with me."

"I didn't know. That's too bad," said Harmon. "There's a man who was a soldier clear through. I'll bet he died like one?"

"He sure did," said Cal.

"I want to hear how it happened. . . . But the point right now is something different. You, not Major Blye—good man though he was. I'm fighting for your soul, Cal. Do you believe I'm an honest man? Tell me."

"Yes," said Cal. "I believe you're honest. I believe you believe every word you say."

"Then believe me when I say that nobody wants peace more than I. That I agree with Scoby one hundred per cent about these Paumons being the nearest thing to human we've ever run across, with brains and souls and pain-reactions to match. He's told you that? I see he has. But from that point he gets idealistic, and I get practical. He thinks this qualifies them to be great friends—I know it qualifies them to be great enemies. It's one thing to make a pet out of a dog, but don't try to make one out of a wolf."

"Or a cheeta?" said Cal.

Harmon stopped talking. The whites of his eyes showed a little.

"I'm talking seriously," he said.

"So am I," said Cal. "Don't you know why that cheeta does things for Scoby?"

"I don't know and I don't care," said Harmon. "I'm concerned with the future of two races, not with a brainless animal. I'm concerned with making you see that just because these Paumons are what they are—because they're so much like us—that we can't ever trust them. We've started something and we can't stop now. Now we've got to break them, teach them with a bloodbath that they'll remember to the ultimate generations that the human is master. We can't stop now."

"Why'd we start in the first place?"

"History," said Harmon, "forced

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us. We can't help it if we're an expanding people." He stood up. "Cal—" he said—"can't you see that what I've arranged for isn't only the right thing, it's the most humanitarian thing? We treated the Paumons humanly in the original conquest. Because of that they took the enough rope we gave them and now they're going to hang themselves. They, themselves, are insisting on being taught a lesson. And, like a good surgeon, I can save lives by cutting now instead of later, when a more extensive operation would be necessary. I save human lives. You might say I even save Paumons' lives. Because, if they grew to a real threat to us, we might have to exterminate them, completely."

"Yeah," said Cal.

"You understand, then?" said Harmon. "Believe me, Cal. You were one of the ones I had hoped could understand."

"No," said Cal. "Put me down with Scoby. No, put me down a notch below Scoby, because I'm still ready to fight and kill if I have to, in spite of this shoulder patch. I just don't have to pretend there's anything right or noble about it."

Harmon sighed. He shook his head slowly.

"I'm sorry, Cal," he said.

"So am I," said Cal. "I just finished talking to Wantaki. I told him he could come in here with sufficient force to protect himself. That he could talk over this Paumons situation—not as conquered talking to conqueror, but as a couple of equals meeting face to face, with the object of avoiding any more fighting. I gave him my promise."

"That was foolish," said Harmon. "It was even a little ridiculous."

"No," said Cal. "Because as Contacts Service head on this planet, I'm interdicting any military action by the Expedition during the time of the talk."

"I see," said Harmon. He stood for a moment, then turned to the desk behind him and pressed a button. Holding it down, he spoke to the desk. "Will you send in a couple of Military Police?" he said. He let up the button and turned back to Cal. "As I say," he said. "I'm sorry. I'd rather have made an ally of you than arrested you."

"Yes," said Cal.

He hit Harmon suddenly in the stomach, and, as the other man fell toward him, hit him again behind the ear with the side of his hand. Harmon fell to the floor and lay there quietly. Cal went out through a back door of the office, down a flight of stairs and into another office banked with the metal cases of mirofiles.

"Sit still, sit still," he said to the startled workers there, "Just taking the short way to my car."

He went out a further door onto the street. The car Annie had been driving was parked across

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from him. He sprinted for it. As he dived inside behind the control stick, he heard someone shout from the door he had just come through.

He floored the throttle and the car jumped away from the Headquarters Building. He shot down the street, out onto the road to the Expedition Landing field and pulled up at the base of the towering Flagship.

Thirty feet up the service ramp, the rear port was open to the ventilation of the warming day. He was through the hatch and throwing over the hand control to close and lock the outer port when a car door slammed, and he heard somebody breathing hard behind him.

He turned. It was Annie.

"You crazy fool!" he said.

The outer port slammed shut and locked with a clang, and a second later the inner door closed also.

CHAPTER THIRTEEN

"You've got to get out of here," said Cal. "You don't know what you're in to."

"I won't, said Annie. "I know very well. And I won't. You can't put me out bodily, either, without leaving the controls here, and you can't risk that."

"I'll manage it."

"No," said Annie. She was quite pale. "I won't let you. I can fight that hard."

They were up in the observation room, where the standby controls of the ship were. The duty caretaker was locked in the projection room behind the wall chart, and Cal had switched on the standby power. It did not take an engineer to do that much; and the housekeeping energy flow it gave him was all he needed. Outside, above the entry ports at three levels, the red lights were glowing to warn anyone back beyond a twenty-yard circle. From the outside screen Cal could see the field below, and the other ships, like models—the little buildings of the field, and Headquarters, the hospital—and beyond those buildings, the limits of Manaha. Further beyond this he could see the green and open hills, with here and there the darker green of trees.

The ground phone buzzed. Cal answered, and the screen lit up with the face of Colonel Alt.

"Truant," he said. "Come out of that ship before I send in MP's to haul you out."

"I wouldn't try that if I were you," said Cal. "I'm prepared to blow this ship and half the plateau if I have to."

Alt hesitated. He looked aside for a moment, then back into the screen.

"You'd do better to cooperate," he said. "I'd be justified in having you shot on sight. You killed General Harmon when you hit him."

"Don't lie to me, Colonel," said

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Cal. "I know when I kill a man. Tell the General I want to talk to him as soon as he's up to it."

He cut the connection. He sat down in the operator's chair by the little desk below the screens. His head swam, and his body felt several gravities heavy. He put his head down for a second on his arms and immediately felt Annie shaking him.

". . . Lie down," she was saying. "There's an off-watch cot in the Communications Room, here." She was tugging him to his feet. "You've got to rest. When did you sleep last?"

"No—" he said. And all the time, he felt his willess, stupid body being steered by Annie toward the cot. "Harmon'll call back . . ."

"Let him call. I'll answer."

"No. You get out—" The words were thick on his tongue. The edge of the cot struck just under his knees, and he fell into it. The world made a sort of half-turn around him, as if he was very drunk, and then suddenly winked out.

. . . His head hurt. It was the amber light from the barber pole —streetlights of the Lehaunan town that was dazzling his eyes and giving him a headache. And he had never been so tired. He wandered through the town with his fire rifle in his hands, letting his feet take him among the dome-shaped buildings. Now and then he shot perfunctorily at what might be Lehaunans. He was so tired that he could not think exactly what he was doing there. Something had not worked out, and he had decided to do something else—but just at the moment he could not remember what that was. He was tired and looking for a place to sit down.

He came at last to a little open space between the buildings, and there was one of the small protuberances like a half-barrel sticking up out of the pavement. He sat down on it and rested his fire rifle across his knees.

There was a building a little to his right and another a little farther off, up ahead of him and to his left. Almost directly ahead, about thirty yards away, was a third building. A barber pole by the building to his right spread its crackling light impartially over the scene.

He sat, not thinking of anything, and after a little while, a Lehaunan ran across the open space before him, saw him, hesitated, and then ran on. A little later, he saw another one run between two houses farther off that could be seen dimly beyond the building to his left.

He did not move. He felt a sort of numb oneness with his surroundings—as if he had grown to be part of the object he was sitting on. The thought that was in his

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head, like a title on a movie screen frozen in position, was that if he rested for a little while he would remember what he was to do next. He sat still.

Some little time later, a family group of three Lehaunan came out of the building directly before him, out of its triangular-shaped entrance. They were what was evidently an adult male, a female adult a little smaller, and a small young one. He sat so still that they were only about a dozen feet from him when they saw him, and they stopped short. They were carrying some small packages.

He and they stayed moveless, staring at each other.

It's quite all right, he said inside his head in normal human speech, go ahead. I won't bother you. It was too much effort to say the words aloud, so, having said them mentally, he merely continued to sit there.

The female adult made a small noise and pushed slightly at the young one. The youngster hesitated, she pushed again; and reluctantly the young one ran off, past Cal and out of sight. The two adults stayed facing him.

That's all right, he said in his head. You go, too. You're obviously civilians. Besides, I've taken your town. I've no need for you.

They did not move for a moment, and then, as if they had heard his thoughts, they began to back cautiously away from him.

There, you see? he thought. You're quite safe. I'm not going to do anything. They were like ants, he thought, afraid of being stepped on. He watched them back away. They were quite handsome in their black fur. He must look like a monster to them. An incomprehensible monster that killed or did not kill for no sane reason.

Still holding their packages, they were backing away from him, back toward the house from which they had come. Sudden pity flooded him.

Go in peace, he thought. Go in safety.

They were almost halfway across the open space between him and the house, now. The male turned, and—turning the female—urged her in front of him. They broke suddenly into a run for their own doorway.

—They're getting away, thought Cal suddenly.

He raised his rifle and shot the male, who fell immediately. The female dropped her packages and put on speed. His second shot dropped her just inside the doorway. He could see her lying there.

The packages lay scattered about in the open. He wondered, idly, what sort of valuables might be in them. They should be saved, he thought, so the young one could claim them at some future date. . . .

—Annie was shaking him. It

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was a terribly hard thing to wake up. He struggled into a sitting position on the side of the cot, but he had come to with only half his mind. The other half was still back in the circumstances he had been reliving in the dream.

"—General Harmon," Annie was saying. "He wants to talk to you. I didn't want to wake you, but you've been asleep there almost nine hours—"

"Nine hours!" he staggered to his feet and lurched into the observation room. Annie tried to help him to the ground phone, but he shook his head. "He can wait—" He laid sleep-numbed hands on the controls of the outside screen. It was late afternoon now, and on the far hills the light of Bellatrix had turned the covering moss to chartreuse color, and the clumped trees to a deeper green. He ran the magnification up to the limits of the scale, and saw—as from a dozen or so yards away—armed Paumons soldiery standing under the trees.

"Wantaki," he said. "He made it."

"What?" said Annie.

He did not answer, swinging across the room to the ground phone. He punched the receive button, and on the screen an image sprang to life of General Harmon, standing half-turned away from him. The call buzzer at the other end must have sounded then, for Harmon turned back and approached the screen. He looked as calm an unharmed as ever.

"Colonel Truant," he said quietly, "I'm ordering you to come out of that ship."

"No," said Cal. His legs were still weak from sleep. He sat down in front of the screen. "I'm staying here until you commit yourself to a meeting with Wantaki, by letting him into the Headquarters area with enough men to match your Headquarters forces."

"I'm not the kind of man you can blackmail, Colonel," said Harmon.

"I'm not blackmailing you," said Cal. "I'm holding you up with a loaded gun at your head. If I blow this ship, you, I, Wantaki and everything goes. If it goes, there's nothing left of the Expedition on this world but a lot of small scattered garrisons. They wouldn't last twenty-four hours with the real power of the outfit destroyed here."

"Rather a strange way to go about saving lives, isn't it?" said Harmon gently. "Have you counted the people that'll die—and the Paumons, as well—if you blow up that ship and its armaments?"

"You don't understand me," said Cal. "I told you I wasn't up on General Scoby's level. I know what I am, if I blow this ship. But if I have to blow it the Paumons'll come out of it more even than if I hadn't. And the only way I can

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get you to meet with them properly is to threaten to blow it. And I can't threaten it without meaning it. And I mean it, General—" Cal looked into the imaged eyes of Harmon, but what he saw was a small, black-furred figure tugging and murmuring at a larger, black furred figure fallen still in a triangular doorway. "You better believe I mean it."

"I'll give you thirty minutes," said Harmon. "If you haven't started to come out thirty minutes from now, I'll order the other ships on the field here to open fire on you."

"You know," said Cal, "you can't destroy this ship before I can blow it—and you're just as liable to blow it yourself trying to destroy it. I'll give you until sunset—about two hours. If Wantaki and his men are not entering the Headquarters area by sunset, I'll blow the ship."

"Thirty minutes," said Harmon.

"Goodby," said Cal. He cut the connection. He stood up, turned, and saw Annie standing a little across the room from him.

"Annie," he said, "There's an escape pod in the nose of this ship that'll kick itself fifty miles up and six hundred miles out. You get in it, and get out of here."

"No," said Annie. "I told you I wouldn't."

"I was too dead to argue with you. Don't you understand? Two hours from now, I'm going to press that arming connection and destroy every living thing for five hundred miles. Can't you get that through your head? I'm going to have to do it!"

"The General will give in."

"No, he won't," said Cal. He looked grimly at the blank screen of the ground phone. "He can't. Not while there's a chance I might not press the button. —And by the time he knows for sure, it'll be too late."

"I'll wait until the last minute," said Annie. "But I won't go a second before."

Cal felt suddenly weak all over. He realized suddenly he had been standing with every muscle tensed to the limit—as if he had crossed his fingers with all the strength in his body, against the possibility that she would refuse to go and he could not get her out before the end.

He let out his breath suddenly and sat down in the chair.

"Good," he said. "Good."

She came quickly over to him.

"Cal—" she said. "Are you all right?"

"Fine," he said. "Fine." She had her arms around him. He grinned a little shakily and reached up and patted one of the arms that held him. "I just love you." The words came out quite easily. He had never been able to say them before. He said them again. "I love you."

She held on to him. They did not say much. After a little while

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she excused herself and was gone for a few moments, and then she came back and they sat together, watching the sun moving toward the horizon.

When it touched the tops of the hills, he felt a strange, cold, feeling thrill suddenly all the way through him. He turned to her.

"It's time," he said.

She did not move.

"You've got to go now," he said.

"I lied to you," she said. "I never planned to go. When I went out just now, I went up to the pod and smashed the control board. I couldn't leave if I wanted to."

He could only stare at her.

"Don't you see?" she said, almost composedly, "I *want* to stay with you."

He said, through stiff lips:

"I can't blow it with you here."

"Yes, you can," she said. Her voice was quiet and certain. It was as if she had moved into a shell of peace from which nothing would be able to take her, neither death nor sorrow. "I know you can."

He got heavily to his feet and looked once more to the hills. The light of the sun was now resting on them and it made the whole horizon seem ablaze with horizontal rays shooting at him. He walked slowly over to the arming button. He looked at her again and put his finger on it.

"—All right, Cal," said a voice from somewhere above his head. "You win."

—It was the voice of Harmon. Cal stared foolishly around, for a second he half-expected the General to walk into the observation room.

"We've been listening to you," said Harmon's voice. "We fired a contact mike into the skin of your ship eight hours ago. If you'd left that room for five minutes, we'd have had you. . . . Look out to the hills, there. I've had Alt standing by to pass the word to Wantaki. You can see the Progs already starting to come in."

Cal looked. Against the glare of the sun he had to shield his eyes, but when he did, he made out dark masses moving in, close to Manaha. They were already in below the range of Headquarters' heavy ground weapons.

"All right," said Cal. "I'll come down."

He waited until the approaching Paumons forces were actually into the city, and then he went down in the ship, with Annie beside him. When they stepped out onto the ramp and started to the ground, he saw that there was quite a gathering waiting for them. There were Military Police, both male and female, Colonel Harry Adom of the Military Police, and Cal's own Contacts Service aide, Major Kai. Major Kai was fifteen years older than Cal and looked like a bank clerk. He represented the old guard over whose head Scoby had put Cal in charge.

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Kai was looking embarrassed and unhappy, but Cal was glad to see him there.

"Major," he said. "You take over Contacts until orders can be got out from General Scoby. He'll want—"

"He's here, himself," interrupted Kai. "Or rather, he's coming in right now." He pointed off to their left and upward. Cal, glancing in that direction, saw the sudden flash of a pinpoint of reflecting surface, high enough up to still catch the sunlight.

"When did he send word he was coming?" said Cal.

"Yesterday," said Kai, unhappily. "The message came in. We couldn't get hold of you."

Cal had reached the bottom of the ramp now. The MPs waiting there closed about him. He saw the female MPs moving in on Annie.

"Wait a minute!" he called. "She didn't have anything to do with this. I—"

They paid no attention to him. The MP's were searching him for weapons.

"All clean," said one.

Across the field, the courier ship bearing Scoby was now down and landed. There was quite a crowd around it, and as the hatch opened and the small figure preceded by a small cheeta came out; another small figure walking like Harmon stepped forward to shake hands.

"Cal—" said Annie's voice.

He looked over at her, as the cold metal of handcuffs closed around his wrists. They were doing the same thing to her. For a second, they could look at each other. Then the MP's closed around Cal once more and he and she were led off in different directions.

CHAPTER FOURTEEN

The Military Police took Cal to the Stockade and locked him in a cell by himself in an unoccupied section of the building. It was so quiet and isolated, that it was almost as if he was in a hospital instead of a prison. At the end of four days they took him in a closed car to the field and put him on a ship for Earth. It was impossible to tell what had happened since he had been arrested—fighting might even have been going on without his being able to know it. And they made it a point to tell him nothing. Scoby did not come to see him.

He was taken back to Earth and to the Fort Shuttleworth Military Prison outside Denver, and housed in separate quarters that were a little better than a cell—a room and a half. It was like a small, compact apartment, and through the bars of a fairly wide window Cal could see a section of perfectly kept green lawn, some tall, pyramidal pine trees, and beyond those the white top of a mountain. He thought that it was Longs peak,

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but he could not be sure and a small, irrational stubbornness kept him from asking anyone, so he never did establish its identity for certain.

Shortly after he was placed here, a Captain from the Adjutant General's department came to see him with a folder of papers. The Captain identified himself as Cal's legal representative. He explained something to the effect that they were pondering charges against Cal. It would probably be treason and lesser crimes, but nothing was established, yet. For some reason it was a matter of jurisdiction. The Captain took himself and his work very seriously, and most of what he had to say Cal found fairly unintelligible. The Captain wanted an account in Cal's own words of what had led up to his arrest, and he took it carefully down in recorder and on paper. They, he and Cal, were pretty well up against it as far as the book went, he told Cal. They would find it hard to deny the statements of prosecution. Their best bet, considering the Lehaunan background, might be to make their claim one of temporary insanity.

Cal was uncooperative on that point. He would not claim temporary insanity. Otherwise, he paid only slight attention to the Captain's flow of words. He was more interested in pumping the other man for news. Annie, the Captain told him, was under arrest elsewhere. He did not know exactly where. He, himself, was not representing her. About the Paumons, he had very little information. The human and native alien forces there were certainly at peace at the present moment, though the situation was touchy, as always. Yes, he believed the Paumons authorities had had some sort of talk with the human Command, but there had been no more than a mention of it in the news services, and he had heard nothing officially.

"It's a long ways off, out there around Bellatrix, you know," he said to Cal.

After the Captain's visit, they began to allow Cal the news services and he got a sudden supply of backed-up mail. There was nothing from Scoby, but several letters from Annie—which had been censored into unintelligibility. He wrote her back, but with no great hopes that his letters would not be treated the same way.

It was July on Earth. There were seldom clouds on the mountain peak that Cal could see from his window. He read a good deal and thought and walked around his locked quarters. The Captain came occasionally with papers for Cal to fill out or sign. July went into August, and August drifted into September. He felt the leaking away of the valuable days of his life. He had given up worrying about what would eventually happen to him. Treason was a capital crime and

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the Armed Services would undoubtedly be able to make it stick. It was a curious thing that while the death penalty was not now impossible by a civilian court, the Armed Services had retained it for certain crimes. For himself—his conscience was clear and it was a better end than Walk's. But he worried about Annie.

Then, the third week in September, his lawyer was able to tell him that Annie had been released without charges. He felt a great lifting of the dread that had been on him, and even hoped that she might manage to visit him after that. But she did not come, and even her letters stopped coming. He told himself that this was good, that she was well out of it.

He was able to face the fact that he loved her, now. Just as he was able to face the fact that with the Lehaunan he had stepped through that last basement door that separates the soldier from the murderer—that difference that the wounded Contacts Man, Runyon has been raving about before the attack on the town. A man, Cal had realized, can kill and go on living. But if he murders, he erects a barrier between himself and life, a barrier behind which he dies alone.

And a man begins, thought Cal, to murder when he begins to tell himself that it is all right to kill—that there are practical or moral justifications for it. Because there are none. Sometimes it happens and things afterwards are better than they were before—but it is never good; it is always bad. There is always a better way if someone has the wit to find it.

I suppose—thought Cal one day, leaning against his window and looking out through the bars at the grass and the pines swayed by the wind that seemed to be always blowing, and the far-off mountain peak with a small white cloud near it—I suppose it should be pushed right to the point of having the live insects and microbes sacred, as well, in order really to hold water. But that's a trap, too. To say, if I can't be perfect there's no point in being good at all. I didn't have any qualms about blowing up Harmon; but even at the end there, I would have put my own head on the block to pull Walk out—and he was something to frighten Paumons babies with and better off dead.

No, Cal corrected himself, I'm wrong about that. Nobody is better off dead—not in that sense. No. There are always miracles. There is always hope. If you deny miracles and hope, you're playing God—and that's the insects and microbes bit all over again. If I can't shoot par, I won't pick up a golf club. Wrong. You do what you can in your own clumsy, imperfect way, trying to hack out Heaven all alone by next Tues-

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day, even though sensible people like Harmon know it can't be done. And damned if you don't make some progress sometimes.

Christ yes, thought Cal! Otherwise we might as well have stayed in little family ape-bands, wandering around and trying to tear out the throat of every other living thing that crossed us. The thing is not to kid yourself. Just because cutting a man open to get out his ruptured appendix has a way of saving life, doesn't mean that it's a good thing to cut a man open. It's a very bad thing, a bloody thing, a destructive immoral wrong being done to the human body—and you must never lose sight of that fact, either through long custom or a need to justify your own emotional reactions to the cutting. And one day you may be moved to the point of finding some way to save the man's life without cutting.

And it's that way with us, thought Cal. We mustn't lose sight of the fact that it's wrong to go up against each new race we meet with all guns blazing. The only right way is to go naked to the stars. Without weapons because we don't need them. You never find a way until you try. And you don't try as long as you kid yourself that it's okay to do it—

The sound of the door opening behind him broke off his train of thought. It was one of his guards with the noon meal on a tray.

"No mail, today either," said the guard, as he put the tray down. "They seem to be losing your address these last few weeks."

Two weeks later, Cal was taken from his cell to the office of the Director of the Prison, where an Administrative Services Major told him he was released. There was no explanation. He was given a small plastic container in which to carry his possessions, a sealed manila evelope, and escorted to the gate of the prison.

As he walked to the gate, he opened the envelope and drew out the sheet of paper inside. It was his release from the Services. He was discharged, he read, without honor, but with prejudice, and not recommended for reservice. The gate opened before him and he stepped out onto the wide parking lot beyond.

He had to look twice before he believed what he saw. It was Annie, and Scoby with the cheeta—and beyond them a convertible flyer. Annie ran and put her arms around him, but Scoby stood impatiently with one foot on the step to the open door of the flyer.

"Oh, darling!" said Annie, holding tightly to him. "Darling, will you ever forgive us? We couldn't. We just couldn't!"

"Come on, come on!" said Scoby.

They got into the flyer and Scoby sat down at the controls with Annie and Cal on the curved seat just behind him. Annie sat pressed close against Cal.

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"Oh, Cal!" she said. She was trying not to cry and it was making her nose red.

Scoby touched the controls and the flyer went straight up about nine thousand feet, then made a half-turn and streaked upward and eastward, gaining speed. Cal caught one last glimpse of the mountain peak to the north of his prison window, and it apparently had put aside all clouds in honor of the occasion. It stood sharp and white against the perfect blue of the sky.

"Where are we headed for?" asked Cal.

"Washington," grunted Scoby.

"Darling," said Annie. "We couldn't even write. We had to make them think you weren't at all important—that we'd forgotten all about you."

He shook his head. The whole thing had happened so quickly everything had an unnatural feel to it, as if it were a trick of some sort.

"But what happened?" he said.

"Politics," said Scoby, not turning his head. Limpari turned cat's eyes about from where she sat looking at the windows, and yawned at Scoby.

"He had to wait—I had to wait, too—until it looked as if nobody cared what happened to you any more. That's why I stopped writing you. Only I didn't stop writing, Cal. I wrote anyway. I just didn't mail the letters. I've got them all for you."

The flyer had been continuing to climb and to increase its speed as it did so. They were now at a hundred thousand feet, with the sky black overhead; and their speed would already be about two thousand miles an hour, Cal noted automatically. After sitting still for so many weeks it was an odd sensation to be hurtling to some distant destination. Below him, he could see the line of the sunset up ahead, flowing toward them across the earth. He felt numb.

"I thought you were well out of it," he told Annie.

"Oh, *no!*" she said. "You *knew* I'd never just give you up! You knew Walt never would abandon you, either."

"Walt?" he said. And then he realized Scoby had a first name. "I don't understand. I don't understand it at all," Cal said. "That Captain assigned to my case said the charge was probably to be treason." He looked at Scoby. "And here I am."

"Matter of jurisdiction," said Scoby. The ship had levelled off now. He put it on automatic pilot and swivelled his chair around, pulling out his pipe. "That's what I went back about originally. The time was just right for squeezing the home folks. I squeezed." He got the pipe going. "I got the Contacts Service made a separate civilian branch of the Government. Not under the Armed Services any more."

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"So you were really acting under civilian authority when you interdicted Harmon and tried to make him talk with Wantaki—" said Annie. "Even if you didn't know it, or Harmon didn't."

Cal looked from one to the other.

"What difference did that make?" he said.

"Just one," said Scoby, uttering rich puffs of smoke from his pipe. "Harmon didn't have the authority to order you arrested. On paper, since a peace had been signed with the Paumons, you as head of the Contacts *Department,* were his superior; not he, yours."

Scoby leaned back around to the automatic pilot and set the speed-and-distance clock. The flyer had reached the top of its arcing flight and now headed downward.

"Of course," he said, coming back, "he had a case to make. The fact orders hadn't arrived, and so forth. So what I did was wait and let things cool, until it wasn't any longer worth the Services while to make an issue out of you. Early this week I tacked your release onto a list of little minor demands I was dealing with from the Services. And here you are."

Cal sighed. He felt unusually small and insignificant.

"No fuss," said Scoby, "Or wasn't that what you were thinking?"

"Not exactly," said Cal. He looked ahead out the window of the flyer. They were almost to their meeting with the sunset line moving toward them over the relief map of the earth below; and beyond that edge of light he saw only darkness. "I was thinking it's all finished, now."

"Finished?" said Scoby. "What d'you mean—finished? You think you brought eternal peace to the Paumons by having Wantaki and Harmon—hating each other's guts —"

"No," said Cal, "they admire each other."

"—Hating each other's guts and admiring each other, whathehell's the difference—" said Scoby, "But just the two of them sitting down across a table from each other? You think the Lehaunan're all set up, now, or that there's no rebuilding to be done with the Griella? Or no new peoples to come? That what you think?"

"No," said Cal. There was a slow, heavy weariness creeping into him. He was looking out the window now at the rapidly approaching darkness, and remembering. It seemed there was always a darkness for him. It had been dark on the Lehaunan hillside before they had gone in to take the town. It had been in darkness that Walk had called him a gutless wonder; and in the Paumons darkness, Walk had died. Night had been falling as he reached for the arming button on the Flagship that meant the end; and it was falling again now.

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"Do you think there's no work to be done?" Scoby was saying. "Why do you think I worked so hard to get you loose? I've got my own department now and I can get rid of the book-preachers and talkers I was stuck with before under the Services enlistment process. I can make up a staff of people who'll work for the work's sake, not for the goddam kudos. Annie's been working for me two weeks now; and I want you for my right hand man, just as I planned."

The twilight line was under and past them, and ahead was darkness.

"It's no use," said Cal. He passed the manila envelope to Scoby. "I'm discharged with prejudice. Not recommended for reservice."

Scoby slammed the envelope to the floor.

"Bonehead!" he snarled. *"Civilian! Department,* not Armed Service. You had so many coats of varnish you think that if the Services turns you down nobody else can hire you, either?"

"I thought, Government—" Cal began, and got stuck.

"Oh, the personnel directors don't *like* it! They don't *like* hiring ex-con's or reformed alcoholics, either. But I'm in charge of my Department. And I say you're hired. And you're hired!"

Cal let it sink in.

"I want men!" Scoby was muttering furiously. "Men, not recommendations!" He was simply blowing off the last of his head of steam, and as proof of the fact, he was glaring, not at Cal, but ahead out the windscreen of the flyer. "It's tough with real ones . . ."

Cal looked ahead out the flyer's windscreen, himself. Annie was sitting close beside him and had slipped an arm through his left arm. He felt the living warmth of her body, close; and a sort of hope stirred in him. And he could feel the lift of the wings spread now to their widest, hawk-like, soaring dimensions, bearing him up. On them they sailed at speeds of which no ape-man had ever dreamed.

Far up ahead, on the darkened horizon, a sprinkling of lights rose into view around the curve of the world. They rose and multiplied as the flyer dropped toward them, until they looked like jewels of all colors scattered more and more thickly upon a cloth of black velvet. Together, the spectrum of their many colored rays made up the white light of a city. It was the city toward which he and Annie and Scoby were now, hawk-like, heading, as to an inevitable destination.—And to that city, now, they stooped.

EDITOR'S NOTE: *The version of the novel you have just read was written especially for F&SF. A somewhat expanded version will be published in book form early next year by Pyramid.*

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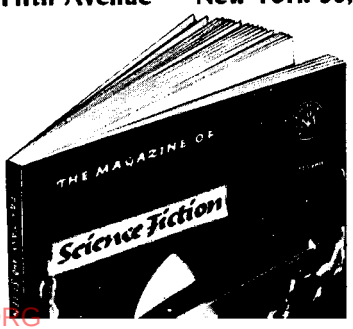

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